Institute of Actuaries of Australia

Quantifying and Managing a Risk Culture

Prepared by:
David Goodsall, FIAA, ASA, AIA
Julian D Gribble, PhD FCIA FSA FIAA
Chris O'Hehir, FIAA

Presented to the Institute of Actuaries of Australia
2009 Biennial Convention, 19-22 April 2009
Sydney, New South Wales

The Institute of Actuaries of Australia
Level 7 Challis House 4 Martin Place
Sydney NSW Australia 2000
Telephone: +61 2 9233 3466 Facsimile: +61 2 9233 3446
Email: actuaries@actuaries.asn.au Website: www.actuaries.asn.au

Quantifying and Managing a Risk Culture

David Goodsall, Julian D Gribble and Chris O'Hehir

April 2009

IAAust Biennial Convention

Abstract

Organisations often struggle to successfully implement Enterprise Risk Management (ERM) systems because they fail to manage the necessary cultural and behavioural changes that accompany the processes. Our objective is to measure the impact of cultural change in the context of embedding ERM into an organisation.

It's an old adage that what can be measured can then be managed. In the journey to embed ERM, organisational culture change is needed to improve and embed the desired risk behaviours and risk culture. To set targets, assess progress, revise initiatives that may be unsuccessful, provide effective milestones, and fairly attribute accountabilities, the impact of changes needs to be monitored and measured and then managed constructively.

We describe a process and techniques to assess, improve and monitor an organisation's cultural change in the context of embedding ERM. The application of these processes and techniques to other aspects of behaviour and their impact on organisational value will also be explored.

Culture is often considered too intangible to measure. To measure the impact of culture it is necessary to identify a causal relationship between inputs that can be controlled and the desired or required outcomes. We know that to initiate cultural change, there are inputs, such as leadership and aligning resources and systems, that can be used. By identifying links between these drivers and the tangible outcomes, such as productivity, retention and increased understanding of risk, a model can be built through which the impact of factors and combination of factors can be better understood and outcomes projected.

We will examine behavioural modelling, through techniques such as choice modelling, to provide a methodology that derives a causal link between the drivers of cultural change and tangible outcomes for an organisation, in a repeatable way. We then apply this methodology to quantifying the risk resulting from human behaviour and its subsequent impact on organisational value. The paper will be supported by practical examples drawn from our experience in the Australian environment.

Keywords: culture, behaviour, modelling, risk management

Quantifying and Managing a Risk Culture

David Goodsall, Julian D Gribble, and Chris O'Hehir

1 The importance of managing risk

All organisations define strategies, structures and actions to pursue their objectives. All organisations face risks, otherwise they would not be in business. At the most basic level, we take risk to be the possibility that objectives are not met. This is clearly a two-sided definition, as objectives can be either not achieved or surpassed. In the current environment, and also from the perspective of ensuring the long term survival of an organisation, it is important to place strong, but not total, emphasis on the management of potential and actual events which adversely impact desired outcomes.

To survive, every organisation needs to manage all the identified risks it faces. These risks may be direct, being those which form the basis of its business, or indirect, being those which are inherent in the infrastructure needed to support the business. In the financial services, the key direct business risks may include, for example, provision of insurance and investment services, and the infrastructure would include systems and technology, distribution and so on. For example, a material fraud will have an adverse impact on business results, but it is unlikely to be a risk event directly linked to planned business outcomes. Looking more broadly than the financial services, there is considerable consistency in the infrastructure risks faced.

All organisations face the critical challenge of effectively implementing the set of actions specified to support its strategies, including those to manage the risks inherent in those strategies. Consequently all organisations are subject to operational risk. By operational risk we mean the risk of loss resulting from inadequate or failed people, processes or systems. This limited definition is based on the current international Basel II definition of operational risk for the banking industry. The Basel II definition of operational risk is quite generic and is now accepted in the insurance industry. It is also inherently applicable much more broadly, albeit with possibly different emphases and the inclusion of some risks which may not be of major importance in the financial services. In the context of this paper, the exclusion of (adverse) external events and legal risk (both included in the Basel II definition) and the exclusion of reputational, strategic and systemic risks is not a primary focus.

2 Enterprise risk management

Operational risk is a central element of enterprise risk management (ERM) and will be a central component of an organisations overall risk management processes and governance. The three key elements of a successful ERM implementation are generally agreed to be strategy, resources and culture. Organisations seeking to embed an enterprise wide view of their risk and the subsequent risk management have found significant challenges with each of these three key elements of ERM.

The COSO (COSO, 2004) definition and following high level comments of ERM are as follows:

> *Enterprise risk management deals with risks and opportunities affecting value creation or preservation, defined as follows:*
>
> > *Enterprise risk management is a process, effected by an entity's board of directors management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives.*
>
> *The definition reflects certain fundamental concepts. Enterprise risk management is:*
>
> > • *A process, ongoing and flowing through an entity*
> > • *Effected by people at every level of an organization*
> > • *Applied in strategy setting*
> > • *Applied across the enterprise, at every level and unit, and includes taking an entity level portfolio view of risk*
> > • *Designed to identify potential events that, if they occur, will affect the entity and to manage risk within its risk appetite*
> > • *Able to provide reasonable assurance to an entity's management and board of directors*
> > • *Geared to achievement of objectives in one or more separate but overlapping categories*

The International Actuarial Association has also provided guidance on ERM (IAA, 2008), in the context of capital and solvency, for the international insurance industry as follows:

> *There is no universally accepted definition of ERM and the very nature of the concept suggests that there may never be one. However, a number of recurring themes/terms appear in an ERM context. Terms like 'holistic', 'integrated', 'top-down', 'strategic approach' and 'value-driven' consistently appear in the various definitions found in ERM literature widely available today. It is not the intent of this Practice Note to add to the growing list of ERM definitions. Rather, the Practice Note has been developed having regard to the common themes and principles that emerge from the various definitions.*
>
> …
>
> *More specifically,*
>
> - *ERM is concerned with the totality of systems, structures and processes within an insurer that identify, assess, treat, monitor, report and/or communicate all internal and external sources of risk that could impact on the insurer's operations*
> - *ERM implies a common risk management 'language' across the operations of the insurer*
> - *ERM involves systematic organisation of and coordination between risk functions i.e. specialist risk 'silos' operating in isolation from each other are inconsistent with ERM principles*
> - *ERM includes both the management of 'downside' as well as 'upside' risks*
> - *ERM seeks to quantify all risks but acknowledges that not all risks can be measured in currency/financial terms*

- *ERM is concerned with both behaviours (the risk management 'culture') and risk control processes*
- *ERM involves holistic consideration of risk information relating to past events (e.g. losses), current performance (e.g. risk indicators) and future outcomes (e.g. the risk profile or risk assessment).*

Having framed the above principles it must be remembered that risk management remains the responsibility of all personnel in the insurer, and not just designated risk professionals. This reflects the fact that risk acceptance and management is integral to insurance. Moreover a series of enabling conditions must exist for ERM to take hold, namely:

- *Demonstrable executive management support is critical*
- *Strong and direct linkages must be made between ERM and the insurer's business strategy and its day-to-day operations*
- *The insurer must establish clear accountabilities for the various aspects of risk management, distinguishing between those in line management roles and those in risk management roles.*

The sentiments expressed by the IAA are generally applicable.

The importance of an organisation's culture is implicit in both of the above quotes.

A recent AON ERM survey (AON 2007) is also clear in this regard. It suggests that ERM should be the primary thread in the cultural fabric of an organisation. Some the key findings of that survey, however, include:

- One in ten organisations describes the maturity of their ERM program as embedded and integrated in the business process
- Approximately two thirds of the survey participants described embedding a risk management culture as a key driver for ERM
- Less than 45% of survey participants significantly take organisational culture into account when implementing ERM, and only 8% of the organisations with a dedicated RM function stated that the prevalent culture was 'entirely' taken into account
- One in seven organisations consider their ERM function is good at communicating the ERM message.

Other surveys over the last few years all reinforce the importance of organisational culture to the success of implementing ERM.

There is now also interest in considering sustainability as a concept which includes, but also extends, ERM. The idea is to look beyond the established ERM framework which focuses on economic, strategic and operational factors to also include social and environmental considerations. This allows organisations to include opportunities presented by risks that may be overlooked by analytic and systems driven approaches. Key to the implementation of a sustainability framework is the culture of the organisation.

ERM is a concept that continues to evolve. The development of the draft International Standard ISO/DSI 31000, ISO 2008, which includes eleven generic proposed principles for managing risk is a current example of this.

3 Importance of culture

The preceding discussion shows the importance of an organisation's culture in a successful implementation of its risk management, ERM or, more broadly, a sustainability focus.

The culture of an organisation can colloquially be described as 'the way we do things around here'. All organisations have their own culture and risk management culture, so the issue is whether a risk management culture supports the corporate goals effectively and helps mitigate the risk that those goals may not be met.

The impact of a culture is reflected in the attitudes, behaviours and actions of the people involved. It follows that an effective way to assess and seek to manage cultures, and risk management cultures in particular, is to look at behaviours. It is accepted that if something cannot be measured then it cannot be managed, and while cultures may not be amenable to direct measurement, outcomes of attitudes and behaviours are. Once behaviours can be assessed the questions of what drives those behaviours can be examined and then the issue of how attitudes and behaviours may be changed in a controlled manner considered.

It is generally accepted that risk management and ERM more broadly need to be embedded into consistent day to day 'business as usual' practices of all members of the organisation. This must include not only the systems and processes of an organisation, but also the culture of the people who operate them. Few organisations claim to have achieved this deep level of integration.

Every organisation has to answer the 'Who, What, Where, When and How' type questions when implementing its strategies. As with other aspects of a business these questions need to be addressed in the context of risk management. This process cascades down through an organisation from the highest level to the lowest, with the levels and groups involved being interlinked. The success of the whole process then depends on both the strength of individual components and the links between them in the organisational cascade.

In implementing a risk management strategy, the focus is on the What and How aspects, which align with central elements in the definition of Operational risk. In the definition of Operational Risk we can make a distinction between the people on the one hand and the systems and processes on the other. The distinction is that the people come under 'How (we do it)' and the processes and systems come under the 'What (we do)'. Intrinsic with dealing with people is also dealing with the culture they have and so the attitudes and behaviours they exhibit.

There is much effort expended and work done in the processes and systems dimension, sometimes almost to the exclusion of the people and culture dimension. There is much work done in the compliance and audit spaces with the objective of providing organisations with assurances that their processes and systems, and the controls around them, are in 'good' condition. This generates management confidence that the processes and systems are working as they should and are not - or at least are not likely to be - compromised.

There is also often much work done around developing and then addressing issues in risk registers. While the recording of risk events (and near misses!) is clearly important, care needs to be taken to avoid the trap of presuming that an actual risk event which has a small consequences is taken to imply that the cause of the event may not be a matter of concern. That is, we need to avoid the danger of focussing on the symptoms of the disease as opposed to the causes (or reducing the number of entries in the register). Small outcomes from a serious or repeating cause should not be a valid rationale for not addressing the serious cause. In principle, care also needs to be taken when relatively large outcomes emerge from a cause which is generally not of major concern ('baby' extreme events). This means that causal analysis and review of risk events against risk appetites is important to a long term effective risk management process.

There is no doubt that adequate and reliable processes and systems are important to an organisation. No one would want to board a plane without assurance that it was properly maintained and so had a very (very!) high probability of reaching its destination. No one would want to place savings into a system that does not provide a high level of assurance that maladministration and poor practices which may lead to loss should be avoided. (We note the impact of the federal government introducing a guarantee on bank deposits recently in this regard. This leaves aside the issues around appropriate advice and investment choices.)

Having said this, it is also clear that while processes and systems are necessary conditions of organisational success they are not sufficient conditions. One way of highlighting this is the hypothetical of putting monkeys in front of very fast keyboards (and assuming the monkeys are well trained in the process of using the keyboards) and then wondering why works of Shakespeare do not appear. More pointedly, we all know of some glaring examples of failures of organisations, sometimes terminal, due to behavioural and/or cultural deficiencies. These range over a variety of issues, including incompetence, ignoring of process and reporting, poor governance practices (in contrast to the theoretical structures), through to deliberate fraud or abuse. In the current environment, with the focus on executive remuneration packages and discussion around the influence those packages may have had on decision making, an understanding of the behavioural influences on people may be an important aspect of understanding how organisations manage their risks. See also Hiemstra, 2008.

A sufficient condition for the long term success of an organisation is the appropriate people and culture. That is, good people can make poor systems and processes suffice (even if not efficiently or easily) but poor people cannot make good processes and systems work in the long run.

4 Risk management maturity assessment

There is clear evidence that organisations often fail, or even go backwards, in their endeavours to implement (enterprise) risk management through focussing on the processes and systems, without focussing on the people and their culture. For example, if new processes and systems are introduced and the users feel disenfranchised or are confused then there is a strong likelihood the implementation will fail. We all know of examples where new systems, when introduced, are deemed by business to not satisfy their needs.

For a risk management implementation to succeed it needs to address both the aspects of How and What – people and processes/systems - and understand how they interact. It is therefore useful to consider the implementation of risk management on a two dimensional array which explicitly separates the How and What aspects. One approach to this is shown on the front face of a risk management maturity model, see EY 2008.

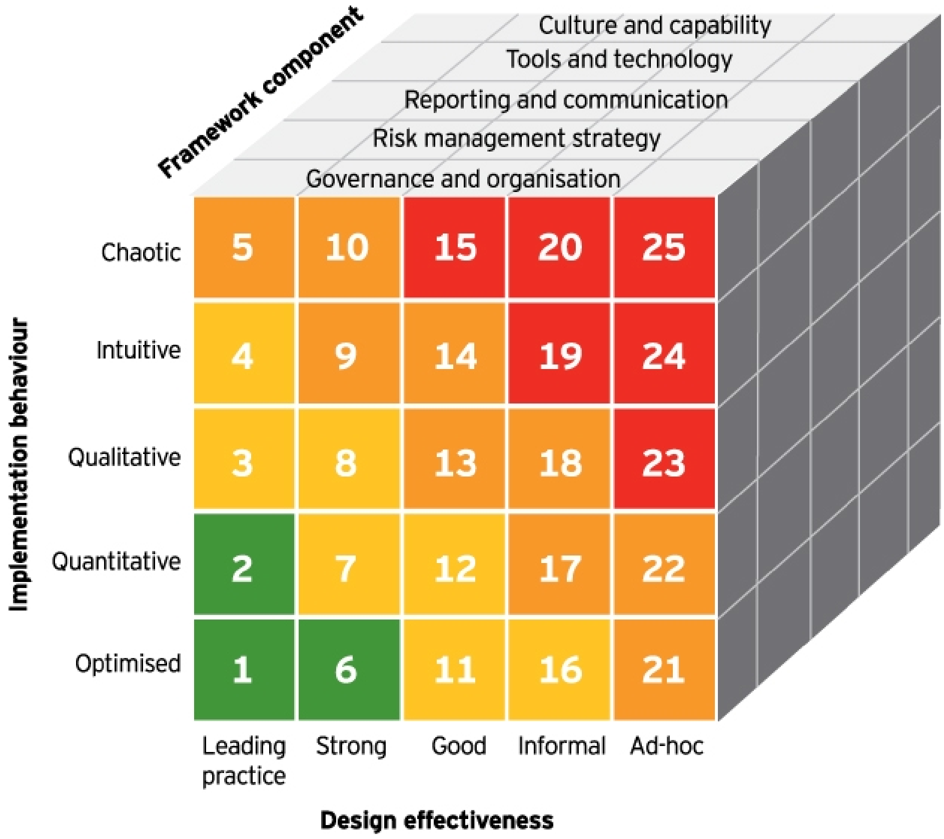

Figure 1: Risk management maturity model

Figure 1 shows that to improve the overall position, that is ultimately aiming to be in or near square 1, there are multiple paths available. So choices need to be made, in particular whether the movement is horizontal or vertical in emphasis. To rephrase the earlier observation, organisations often fail in their implementation of ERM overall, and more particularly with more specific risks, through trying to move horizontally to the left and focussing on the What - processes and systems, instead of vertically downward and addressing the How - cultural and behavioural issues. If an organisation does not realise it has options to choose from, it will never-the-less make implicit choices, but may then get unintended and negative results and not have a context in which to place them. The framework dimension of this approach allows an organisation to assess where it is on a separate How-What grid in for each of the key elements of governance of the change process.

5 Cultural and behavioural drivers

With the importance of addressing the people and cultural aspects established, we need to understand better how to change cultures. To change cultures implies that there needs to be a means of measuring a cultural position so that changes can be demonstrated and monitored. Further, if the change process is to be effective, it needs to be targeted and that implies the need to understand drivers of cultural change. Once drivers are identified then informed decisions can be made as to their relative importance and viability and so projected outcomes identified against which experience can be assessed.

A model which can be used in practice to achieve cultural and behavioural change is provided by Gilbert 1996. This model provides a structured approach to identifying behavioural drivers. See Figure 2.

Figure 2: Behavioural engineering model

The numbering of the element in the cycle indicates where the greatest returns may be expected. So, in principle, effective activities in cell 1 can be expected to achieve better results for less effort and cost than activities in other cells. In practice, an assessment of the 'current state of play' relative to each cell needs to be made prior to undertaking particular activities for a specific organisation. When applying the model to an organisation, a more detailed and tailored list of factors must be developed to reflect the specific characteristics of the organisation and identifying where its weak links are in the cycle.

Several key observations can be made:

Relative importance of organisation vs individual factors: The organisational factors, information, resources and incentives, which are controlled by the leader of the organisation, are the most important. Without these factors being addressed the remaining factors are not powerful enough to achieve success. This reinforces the importance of the need for the 'tone to be set at the top' and the need for clear leadership and demonstrated integration of risk management practices into the daily conduct of business at the highest levels. Unsurprisingly, people follow the examples set for them, in practice, by their seniors and leaders.

Importance of common language: Language is a common denominator of culture as it frames conversations and so behaviours. To have a successful risk management culture everyone involved needs to be comfortable with the language and terms used and understand how they interact with their day to day roles and accountabilities.

Incentives: People have a natural tendency to do what they are rewarded for. It is crucial to have the appropriate rewards in place to support cultural and behavioural change as well as the appropriate disincentives to enforce the consequences of poor behaviour.

We need to recognise that the behavioural model requires input and commitment from both the organisation and the individual. It requires both 'sides of the coin' to be in play for success. While the expectations can be set and systems and processes put in place to enable them by the organisation, it requires buy-in and commitment from the employees to establish the appropriate culture and behaviours. In a risk culture outcomes depend on decisions made by individuals, albeit subject to varying levels of review. However, what is considered risky may vary between individuals and by an individual over time. In monitoring and measuring a risk culture we are thus assessing whether the business related risk appetites of these individuals are well informed and consistent with the organisations risk appetite, policies and processes.

6 Behavioural Modelling

We have established that culture and behaviour are critical to the success of risk management for an organisation. We have also outlined a process through which the implementation of risk management can explicitly assess where an organisation is positioned to determine desired cultural and behavioural changes distinct from the process and systems changes. We have also outlined an approach which allows us to identify drivers of behaviours and hence culture.

What we now need to do, to bring the risk management process to fruition, is to develop the means to measure and thus monitor cultural and behavioural change. We need data, to develop models, but few organisations collect data on behaviour, or have the infrastructure in place to do so. An organisation's reporting systems, including risk event reporting, are typically based on observed data including outcomes and impacts. That is, outputs of the process may be recorded, but inputs and drivers are not. Similarly, human resources systems are not usually setup to collect behavioural data as their systems are commonly set up to support administrative functions such as payroll. Again, a recording of the outputs of a process rather then inputs or drivers. Some leading organisations do conduct employee surveys of various types which may provide some indicative information, but these are not generally designed to directly collect behavioural data either.

Existing approaches to surveying culture often provide an indicator and research based strategies for moving element of the indicator to better levels (for example, blue behaviour is best). However these approaches can fail to provide a direct linkage between the strategies and the likely impacts on the organisation. In turn, this means that measuring the success of a strategy is not easy for the organisation. We need a methodology which allows casual links to be made between attitudes and behaviours with resultant actions and outcomes. Then expected changes can be assessed against actual changes. With such links, and accepting that an organisation's culture is manifested through behaviours and actions, we have a mechanism for assessing the organisation's culture and the impact of that culture on the organisation. Further consequential benefits to the organisation may also include things like improved recruitment processes, more focussed training and improved competencies.

An approach which provides these linkages is behavioural modelling, using a choice modelling methodology. Choice modelling has a lengthy heritage in the marketing arena where it is established as a methodology for marketing departments to decide on which features of a product are most valued by a target audience.

The key to choice modelling is to transit from recording people's revealed preferences after the event to assessing their intended or stated preferences before the event. We all know that what we may report as the drivers of our actions after an event may not fully coincide with the reasons and causes of our decisions, since the wisdom of hindsight may change our retrospective perspective on a process and may only report that which we may wish to make public. Once we understand people's preferences in a prospective way, we have insight into the drivers of their behaviour and so can model expected outcomes and project the impact of changes in the environment. For example, the impact of changes in remuneration. The other major advantage investigations into stated preferences have over reviewing revealed preferences is that revealed preferences are limited to actual actions whereas investigations into stated preferences permit the use of hypothetical situations and so offers a richer investigative opportunity. It also permits the assessment of the relative utility of various choices giving insight into the relative importance of those choices. This then provides the basis for assessing the relative importance or value of a set of possible actions and their interactions

The statistical analysis and experiment design needed to collect stated preference data are quite precise and complex, but are relatively well established. A discussion of these techniques is beyond the scope of this paper.

It is also important to recognise that to successfully implement the proposed approach, a truly multi-disciplinary team is necessary.

7 Framework

Having now identified a tool which allows the identification of stated preferences we are able to put together a high level process which can be applied to assessing and managing a risk management culture. See Figure 3 below. Note the 'control cycle' iterative nature of the process, as people and organisations change over time the cultural aspects of the organisation can also change.

The process is based on the implementation of a choice modelling approach. The initial inputs for the Survey design workshops and focus groups can be sourced from the cultural and behavioural drivers noted above augmented by expert input from the organisation and others as required.

The complementary aspects of the cultural and behavioural drivers, the organisation and the individuals it employs, are represented by the left and right columns in the Implementation - Individual phase of the process.

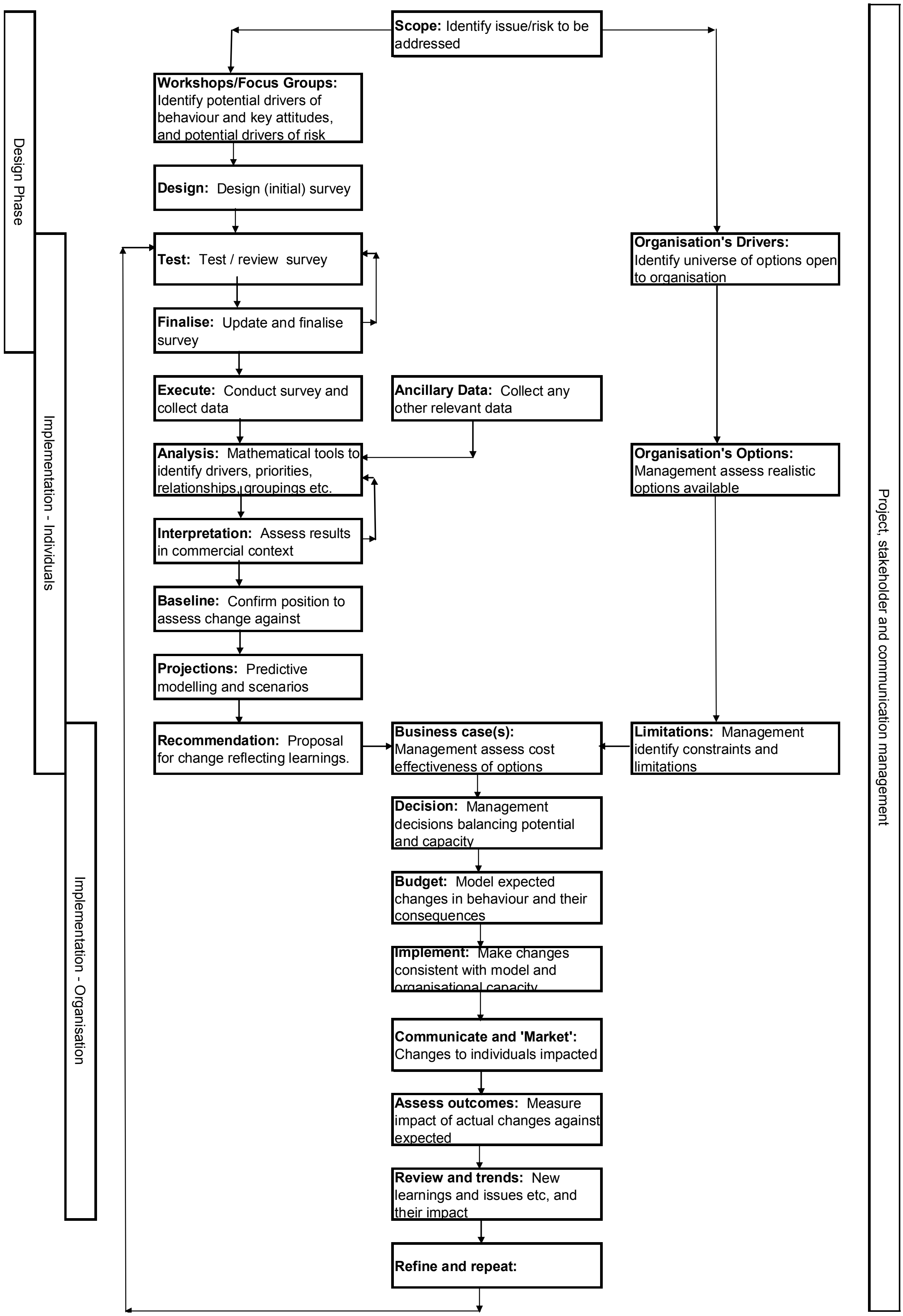

Figure 3: Framework for managing a risk management culture

8 Example

The following example broadly follows the process outline in the previous sections and applies the method to assess the risk culture in the unit pricing area of a financial services company.

Identify issue/risk to be addressed

The issues will be identified through workshops with management and staff. In this case they may be:

- High staff turnover and difficulty of recruiting experienced staff
- Risk of errors requiring compensation
- Attitudes to risk management of staff
- Effectiveness of controls

The choices that can be made by individuals are:

- To stay or leave
- Follow procedures and controls or not
- Look for problems and action them if found or not
- Encourage others to do the right thing

The actions to be taken by employers are:

- Packaging and remuneration
- Performance Measurement
- Non financial benefits associated with the brand promise of the employer
- Investment in systems or processes
- Realignment of job roles
- Training and development

Identify attributes of behaviours

The identification of all potentially relevant attributes or drivers is a key part of the process and is again achieved through focus group workshops. In determining the drivers it is important not to dismiss potential drivers as being unimportant based on opinion or personal views, as this could be biased. One mechanism that allows you to do this is through choice modelling which allows you to identify areas of common concern and areas of volatile concern. An informed decision can then be made as to the implications of drivers on an evidence based approach.

Although many drivers will be commonly included, it is important to consider the particular circumstances of both the organisation and the purpose of the analysis.

Again, the model proposed by Gilbert as illustrated in Figure 2 can provide a basis to understand which drivers require testing regarding individual and organisational elements. Additionally, external factors should be understood so as to interpret the current state. Over time, the relationship between external factors and individual/organisational factors can also be ascertained.

In our situation typical drivers may include:

- Individual factors
    - Workplace demographics
        - Age

        - Sex
        - Seniority
        - Length of service with organisation
        - Length of service with business unit
        - Working hours
    - Training and competencies
        - Education level
        - Language skills
        - Experience with unit pricing
        -
    - Performance
        - Performance review results
    - Attitude
        - Embedded learning / individual risk appetite
        - Commitment
        - Job satisfaction

- Organisational factors
    - Expectations
        - Corporate risk appetite
        - Conflicting goals with others such as relationship managers
        - Corporate risk framework
        - Supervisors
    - Resources
        - Quality of procedure documentation
        - Quality of controls
        - Manual processes
        - System reliability
        - System functionality
        - Issue escalation process
        - Resourcing
    - Incentives
        - Remuneration incentives
        - Performance measurement
        - Work pressures

Design and conduct survey

This is the most important phase of the exercise as it is the source of the data both to categorise the characteristics of the respondents and obtain the multiple stated preferences on which decisions for actions will be based. Depending on the degree of insight required, the survey can be a long document and may be completed either by indicating preferences on a paper based survey or online survey design. An advantage of the method is that because you are looking at stated preferences using a number of scenarios it is possible to test many more options in a structured manner and hence require fewer respondents and still obtain meaningful results.

In our example we have set out a simplified survey that looks at only three of the factors to be evaluated to illustrate the concept, namely:

- Training
- Quality of procedure documentation
- Issue escalation process

When conducting a full survey there will be more alternatives each with more detail presented. Our sample survey is structured as follows:

Sample Survey

Part 1 Background Information

This section captures the basic demographic information about the individuals and their employment situation.

Part 2 General Risk Issues

This section helps to identify attitudes of individuals which can be used to group them in the analysis. Sample questions:

Which of the following best describes the quality of unit pricing:

1. Unit pricing is done well with few errors as people take pride in their work
2. Unit pricing is done well with few errors as the procedures are clear and the staff are well trained
3. Unit pricing is not done well as there are too many manual processes
4. Unit pricing is not done well as the staff don't have time to do it properly
5. Unit pricing is OK
6. Unit pricing has many mistakes which don't get picked up.

Which of the following best describes your contribution:

1. I care about the results and look out for possible problems and raise them straight away
2. I care about the results but I am not encouraged to raise a problem
3. I do my job but it is up to others to find any mistake I may make
4. I care about the results but I don't have enough time to check my work properly
5. I do my job because that is what the company pays me to do.

Which of the following best describes the company's attitude to risk:

1. The company cares about managing risk and it is part of what we do
2. The company says it cares about managing risk but it's just a lot of extra forms to fill in
3. The company cares about managing risk but I'm not sure how that applies to me
4. I am not sure what the company's attitude to risk is
5. The company manages risk by penalising those responsible for mistakes.

Which of the following best describes your capability to do your job:

1. I have been trained by the company to do my job
2. I learned to do my job at a previous employer

3. I need to be experienced to do my job as the training is not sufficient
4. I don't need a lot of experience or training to do my job
5. I don't yet have enough knowledge or experience to do my job properly
6. The people I work with are well trained
7. The people I work with are not well trained which makes my job harder.

Part 3 Alternative Scenarios

This section helps to produce the relationship between actions available to management and the reactions of the respondents. This information, when analysed, provides an empirical base upon which a decision can be made.

The format of this section follows the basic principle of choice modelling, being the representation of bundled scenarios from which the individual chooses a preference and an associated impact.

For example, to test retention you might compare various internal offers with external offers and ask whether the individual would stay with the company and for how long.

This element of the survey needs to be targeted to analysing particular problems that are critical to understand.

Analyse results

The analysis of the results may take several forms to ensure that all the various relationships are identified. While mathematical tools assist in highlighting these it is practical commercial interpretation of the results that provides the ultimate value.

In looking at attitudinal problems such as risk culture the respondents will tend to form a number of clear groups with a common view or approach that is then used as the basis for the analysis. It is important to understand the characteristics of each group so that predictions of behaviour can be made and to permit the tracking of changes in response to the management actions taken.

The groupings often emerge from the attitudes to issues raised in Part 2 of the survey and it is their choices in response to the scenarios in Part 3 of the survey that provide insight into behaviour. A detailed analysis of the attitudinal responses against the demographic information is a fundamental starting point.

In forming the groupings it is important to consult with the management to gather additional information that may explain the observations that has not been captured in the survey. For example two groups who are otherwise similar in characteristics may have very different attitudes because they, until recently had different managers, one who is effective and one who was not.

Identified groups

To illustrate how the results may appear we have assumed that the analysis leads to the respondents being categorised into four groups:

1. The Champions – very experienced and capable
2. Up and Comers – less experienced but keen
3. By the Book – Generally competent, do whatever the procedure says without question
4. Passing Timers - Don't really care about the job or outcomes as long as they get paid.

These groups would be statistically identified from the responses in practice, with the identified attitudinal groupings being interpreted and classified according to each group's characteristics.

Having identified the groups the next task is to understand their attitudes to risk and what factors they may respond to that can be used to improve the risk culture. In practice this can be an iterative approach where the groups may be are refined after considering the factors to which they may respond.

The scenarios were designed to bring out stated choices relating to issues such as whether a person would care if they made an error, would look for an error while performing their duties, would report an error if they found one, would properly comply with controls, would contribute to risk management in the unit, would be a positive or negative influence on risk outcomes. These factors can be examined individually and in combination for the different groups to determine relationships between the groups and expected outcomes. Graphical techniques such as heatmaps are useful tools to assist in this process.

Interpret results

An illustration of the conclusions drawn about the groups identified above are:

- The Champions are keen to do a good job, the success of the unit matters to them. They are frustrated by inconsistent messages from management. While very capable they can tend to know the answer and take decisions to get the job done without following procedures, indicating a lack of risk awareness although with the best intentions. They tend to enjoy improving things but do like to do it their way. Those who have been with the organisation for six years or more are fairly loyal and do not intend to look for other jobs. Those who have been there less than six years appreciate their value and keep their eye out for a better opportunity. Overall a reasonable risk culture which would be strengthened by increased awareness of the need to not act independently of the organisation despite their expertise, or to supplement their knowledge with more detailed knowledge of systems and processes.

- Up and Comers, while they generally have less experience than the Champions are also keen to improve things but are more consultative and risk aware. They want to be noticed and hence are on the lookout for ways to do so. They feel better trained and engaged. They care about risk management but are not convinced that the organisation does. They experience some frustration and will tend to look for other jobs in the next year or so. While the best group for risk culture they show high retention risk

- By the Book have usually been with the area for three years or more. They are guided by procedure and do not look beyond the process, hence they will not question the process or outcomes. There may be some cultural issues at play for some of them. They will tend to respond well to good procedures supported by training. They are comfortable in their jobs and in the absence of a better offer (which they would readily consider) intend to stay. Overall a weaker than desired risk culture as they do what they are asked rather than actively participate in risk management.

- Passing Timers also tend to have been at the organisation for three years or more and have often not had other jobs. They show no interest in doing more than they have to and are unlikely to add value to the group. The desire to do a good job varies from a reasonable level to not caring as long as it doesn't impact them personally. They are unlikely to care deeply about quality and good risk management, in fact, they generally are unaware of the concept. They also intend to stay in the organisation in the absence of a better offer. Overall a poor risk culture.

Additional results are also obtained, by comparing the differences between groups, further investigations, and discussions with management:

- The Up and Comers tend to be new to the organisation whereas the By the Book and Passing Timers have been there mostly three years or more indicating there may have been a change in practice around recruiting or training. On investigation there was a change in management three years ago that introduced a new staffing policy, improved procedures and training for new staff.

- A number of respondents indicated that the organisation penalises those who make mistakes indicting a disincentive for early reporting of problems and a likelihood of a blame game when they are revealed. On investigation the bonus system has a reduction for managers who have errors or management letter points raised by the auditors. Managers who do not want any problems discourage the early reporting of errors which tends to lead to errors taking longer to emerge and at greater overall cost.

Predict changes

The analysis leads to a number of conclusions and allows the development of some desirable outcomes and specific issues to address.

Our groupings do not include a Safe Pair of Hands group that is happy and competent in their roles and who will support, but not necessarily drive, a good risk culture. This is a cultural gap that Management would like to fill as it would provide positive role models and also useful continuity for the organisation.

From an organisational point of view:

- There is a need to align the incentive system to a positive risk culture that encourages the constructive raising of issues rather than suppressing it, so staff actively seek opportunities for improvement from past mistakes

- There is a disconnect between the training and capabilities of staff brought on in the last two years and other staff leading to a difference in risk cultures and potentially performance that needs to be addressed to move people from the By the Book and Passing Timers to a Safe Pair of Hands. In addition the inconsistency in risk culture is seen as an inconsistency of management.

In relation to each group:

- The Champions need to be more aligned with the risk framework of the group and act as mentors for the up and comers.
- The Up and Comers need to have their frustrations addressed to improve job satisfaction and improve retention
- By the Book need to be more engaged in risk management through its inclusion on the process supported by training in what it means and looks like for them so they can move to a Safe Pair of Hands
- Passing Timers need to move to a Safe Pair of Hands or out of the organisation.

In summary, the desired outcomes are a reduction in the numbers of By the Book and Passing Timers, the emergence of a new group, the Safe Pair of Hands, a reduction in frustration levels of Up and Comers and their increased retention, and the Champions engaging in organisational risk management rather than personal risk management.

Determine actions in context of business case

At this stage it is up to management to decide what actions they wish to take to achieve the desired outcomes. In doing so they must consider the cost of not taking action against the cost of doing so.

Often a pilot program may be put in place to test the results before a full implementation. Because there is a need to change diverse groups of people a single set of actions may or may not work and a range of actions should be considered where possible to determine which is the most effective.

Pilot programs which are worth investing in can be determined through the analysis above by comparing people's responsiveness to different potential management action. In this way, an optimal mix of 'change' can be assessed and costed in a design capacity prior to running the pilots.

Assess outcomes

Having set a baseline it is now possible to measure the outcomes of the action taken by repeating the process in one or two year's time, amending the process to ensure the change is properly captured. It is important to understand what worked and what didn't and understand the reasons for that in order to improve the process.

9 Summary

We have established that culture and behaviour are critical to the success of risk management for an organisation. We outline a process through which the implementation of risk management can explicitly assess where an organisation is positioned to determine desired cultural and behavioural changes distinct from the process and systems changes. Next, we outline an approach which allows us to identify drivers of behaviours and hence culture. We then outline a process for modelling behaviours, choice modelling, which allows us to understand the drivers of behavioural choices in contrast to outcomes. The understanding of drivers of behaviour permits the development of specific actions to improve a risk management culture and to project the impact of those actions. Consequently we arrive at management tool which can be applied to improving an organisation's risk management culture. Finally we have illustrated the application of the framework with an example.

References

AON, 2007, *'Enterprise Risk Management: The Full Picture'*, AON. See www.aon.com

COSO, 2004, *'Enterprise Risk Management – Integrated Framework'*, Executive Summary, Committee of Sponsoring Organizations of the Treadway Commission, September 2004.

EY, 2008, *'Postcards from the edge: Part one: Assessing your risk management maturity'*, At the helm, August 2008.

Gilbert T F, 1996, *'Human Competence: Engineering Worthy Performance'*, Pfeiffer, 1996

Hiemstra S W, 2008, *'Can bad culture kill a firm?'*, Risk Management, Issue No 14, Society of Actuaries, December 2008

IAA, 2008, *'Practice Note of Enterprise Risk Management for Capital and Solvency Purpose in the Insurance Industry'*, International Actuarial Association, August 2008.

ISO, 2008, *'Risk management – Principles and guidelines on implementation'*, Draft International Standard ISO/DIS 31000, 2008.