

4. Synthesis

4.1 Chapter context

The benefits of quantitative methods in risk management are described by Bernstein [141, p48] as follows:

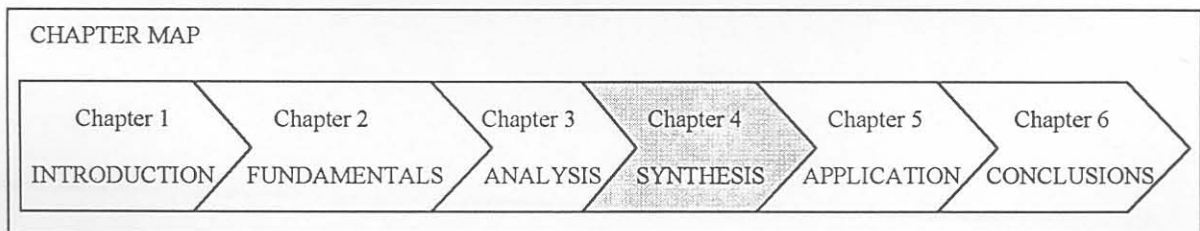
As one ingenious idea has piled on top of another, the development of quantitative techniques for managing risks has enhanced our quality of life and has set the accelerating tempo of modern times. These methods allow people to take more risks than they otherwise would - a benefit to society, which cannot progress without risk takers."

Mintzberg however observes that [142, p587]:

For while systematic data create the foundation for our theories, it is the anecdotal data that enable us to do the building. Theory building seems to require rich description, the richness that comes from the anecdote. We uncover all kinds of relationships in our hard data, but it is only through the use of this soft data that we are able to explain them.

The Concise Oxford Dictionary [74] defines synthesis as:

Combination, composition, putting together, (opp. analysis); building up of separate elements esp. of conceptions or propositions or facts, into a connected whole, esp. a theory or system.



This chapter forms the heart of the thesis in that it takes the analysis from the preceding chapters and synthesises it into a conceptual theoretical framework for the management of risk in business change. This framework is then tested in the following chapter by means of practical application.

4.2 Framework requirements

The preceding analysis has resulted in the following general requirements:

- The generic risks identified must be accommodated and treated appropriately.
- The risk management model must make provision for the 5 change types.
- Use must be made of the identified quantitative and qualitative techniques.
- The identified tools must be built into the framework.
- A risk management framework must address the complete business improvement life-cycle.
- The approach needs to be integrated with the other business management activities.
- A systems approach must be ensured.

Results from the research in the previous chapter indicated that in addition to the areas that receive due attention in terms of change management risk, the following will require attention in the future (Figure 40):

- Use is made of appropriate qualitative and quantitative techniques.
- Sufficient resources for implementation and contingencies.
- Regular review of benefits and risks during implementation.
- Formal clear implementation plans are accepted.
- Risk analysis done in parallel with change analysis.
- Post implementation risk management plans.

It follows that if the synthesised framework assists in addressing these areas, then value will be added to businesses experiencing business change in the event that the proposed framework is employed. In order to further assist with synthesis of the framework, the major advantages and disadvantages shown in Table 46 should be taken into cognisance as provided by the market research (Figure 48 and Figure 49).

Table 46 - Major Advantages and Disadvantages of a Formal Risk Management Approach

Advantages	Disadvantages
<ul style="list-style-type: none"> • Facilitates changes management • Problems are identified and contingencies are put into place. • Provides a longer term focus. • Minimises exposure to failure. 	<ul style="list-style-type: none"> • Some solutions are overlooked due to their high risk. • Requires additional effort, skills and time.

4.3 Baseline case

A hypothetical case has been developed for three purposes:

- Facilitate the logical reasoning in the synthesis process for this thesis.
- Provide a first-line test case for the model developed in the thesis.
- Facilitate the understanding and reasoning process for the examiner/reviewer of the study.

In order to assist with synthesis, a theoretical case was developed which provides the framework for developing constructs for the full spectrum of business dynamics as relevant to this study. As this case is lengthy, it has been attached as appendix G. In brief, the case deals with a chicken processor whose business situation requires remedying. A range of options are available with their respective risks. It must be noted that while the case is a realistic representation of any business in the chicken processing industry based on the researcher's experience in this area, it in no way refers to any particular company, other organisation or person whatsoever.

4.4 Modelling

4.4.1 Overview concepts

Literature and experience indicates that the prudent starting point for analysis is the business strategy regardless of the magnitude of the area undergoing the analysis. This means that either the strategy is coherent and clearly understood or is carefully derived. It can be argued that strategy must be made clear or an integral component of any type of business change that is being considered. It is just the role that strategy plays that differs as shown in Figure 64. The change types that bring about lower strategic leverage have a stronger alignment need, i.e. they are dictated more by strategy than they set the strategy.

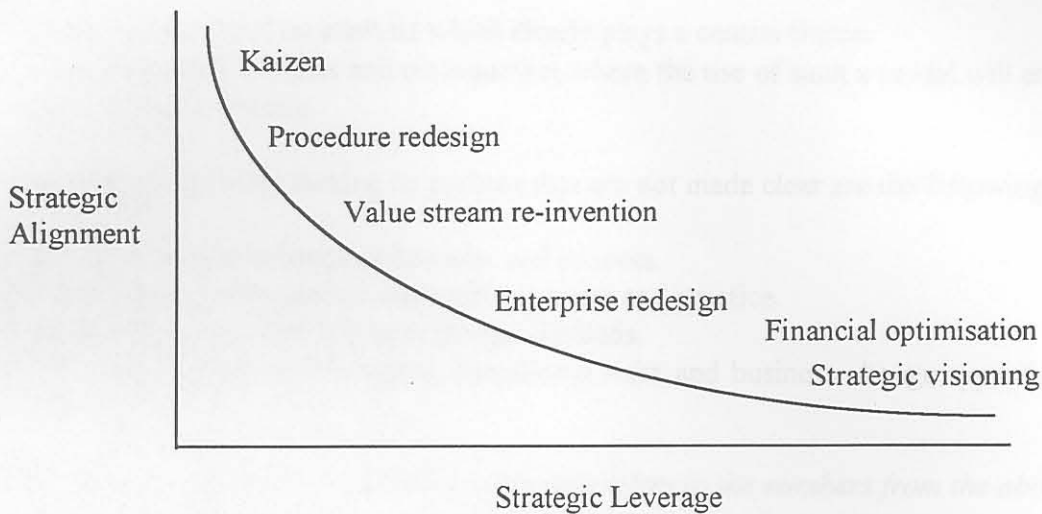


Figure 64 - Role of Strategy in Business Change Initiatives

At the strategic level a few key risks would be identified. These are the few areas where the business could be vulnerable. Clearly some risks may not have any relevance regarding change initiatives, but at this point the relevant facets have been identified. It follows that the more strategic the change initiatives, the more strategic risks are relevant. What has therefore been achieved by identifying the strategic risks, is that the strategic context has been pegged.

The next analysis is largely dependent on the type of business change under consideration. It is however possible that a general approach be employed in order to analyse the risks and then manage these accordingly. In other words, regardless of whether kaizen or value stream reinvention is being considered, it is possible to have a generic framework that assists the analysis of risk and the management thereof.

In exploiting this, the framework proposed by Charette is considered. The original representation (Figure 20) is depicted in a different graphic as shown in Figure 65. The purpose of this is to highlight its core attributes.

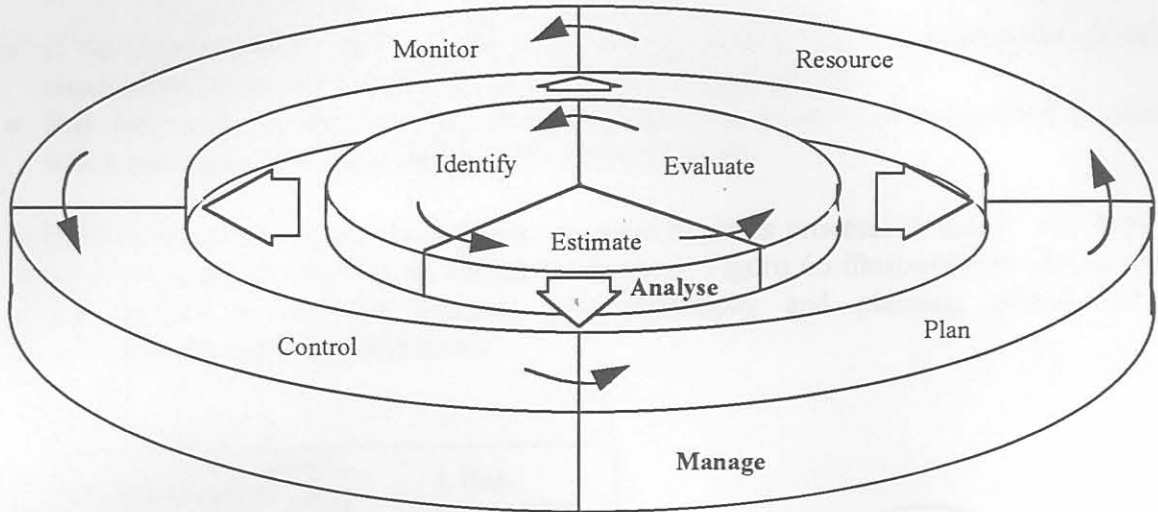


Figure 65 - Modified Charette's Risk Analysis and Management Process

From the diagram, the risk analysis activity is central. The first step is risk identification which involves the process of disseminating the issues and then crystallising the core risks. The following step is risk estimation which entails the assessment of how far reaching the risk is. The evaluation phase involves the understanding of what options are open for action (if required) in terms of the identified risks. As shown this is typically an iterative process.

Once the risks have been analysed, the management process is possible. In Charette's terms, the first step is planning, then resourcing these plans, monitoring their execution and then controlling by means of corrective action or the deployment of contingencies. Not only is the process recursive, but it also continuously interacts with the analysis exercise.

The possible attributes regarding this model are:

- Emphasis is placed on analysis which clearly plays a central theme.
- It positions risk analysis and management where the use of such a model will ensure that it gains due prominence.

Areas that are possibly lacking or perhaps that are not made clear are the following:

- ① The relationship between philosophy and process.
- ② Commonality with general management terms and practice.
- ③ Integration with other business change methods.
- ④ The relationships with business operational risks and business change type risks (project orientated)

Note: The remainder of the section continually refers to the numbers from the above list.

(a) Relationship between risk philosophy and risk process

In point ① above, business theory and practice indicates that tight relationships need to exist between philosophy and process. Very conceptually, philosophy provides the guidelines

within which process operates. It further provides direction for instances where processes do not exist. Processes are those set of sequential and or parallel actions which detail the actions that need to be taken. Liberally applied, the relationship between the risk philosophy and the risk process(es) is analogous between the vision (or strategic intent) and the business processes.

As instrument to understanding this relationship better, the factors influencing the risk philosophy need to be examined. This is largely governed by the following:

- The attributes of the risk under consideration.
- The organisation's propensity to risk.
- The propensity to risk of the various role players or key decision makers involved.
- Demands of the stakeholders.
- Dictates of the business environment other than the stakeholders (e.g. new technology).

The relative importance of these are given in sequence of the above list.

A feasible question arises in terms of whether philosophy follows process or vice versa. Argument for the former is that if weight in terms of philosophy holds in the sequence given in the preceding list, then the risk process holds the key to the articulation of the risk philosophy. The argument for the latter could arise from:

- If the organisation is mature in terms of risk management, then the philosophy should be reasonably rugged and sufficiently equipped to guide the process.
- Risk philosophy is articulated at the abstract and conceptual level as opposed to process which operates at the functional and transactional levels.

In business it can be argued that strategy precedes business process. In reality, this does not occur sequentially, rather it is an interactive process. Figure 66 illustrates the interaction of project phases in the risk analysis, risk philosophy and planning phases for the commercialisation of a new business¹.

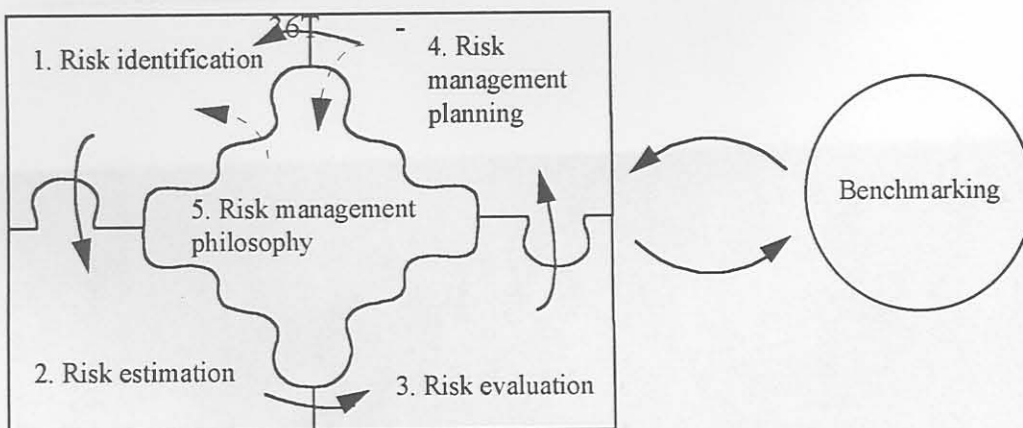


Figure 66 - Interaction between Risk Philosophy and Risk Process

¹ This is described in more detail in the application (chapter 5).

(b) *Commonality with general management terms and practice*

In point ②, it was raised that the management functions of (1) plan, (2) resource, (3) monitor and (4) control do not necessarily align with general management theory. As described earlier in the study, various models exist in terms of management functions. One traditional model has been (1) plan, (2) organise, (3) lead and (4) control. More recent thinking has alluded to the new roles for management where the role moves from paternalistic to facilitative. Verbs like communicate, mentor and leadership are taking more prominence. There is however no absolute in approach - paternalistic or facilitative as they are and will be situation dependent.

It may be argued that the term management may pertain to two different concepts, namely:

- Senior staff in the organisation.
- Fundamental functions required to achieve a mission.

In this light, (1) planning, (2) organisation, (3) leading and (4) control are the basic functions required to achieve a mission. Taking modern management trends into account then, the “senior staff” play a facilitative role while the management functions are increasingly becoming the domain of the “lower” level staff. The revised management framework as shown in Figure 67 is therefore suggested.

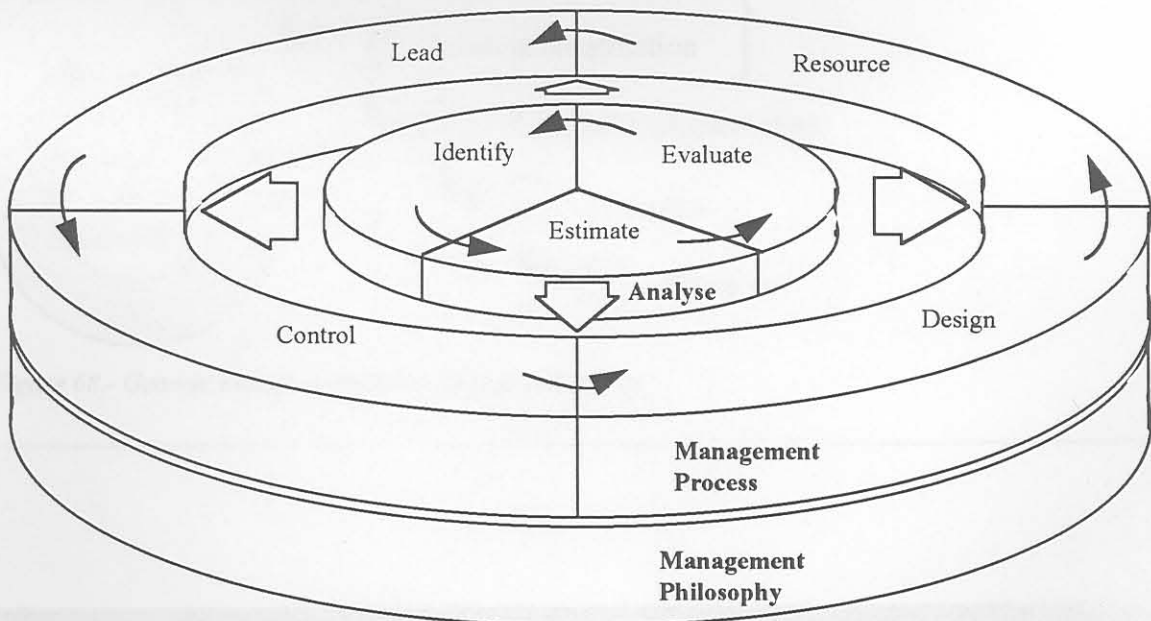


Figure 67 - Conceptual Risk Management Framework

This model is however conditional on the following definitions:

- **Design** - This involves all the management actions required to plan the risk management actions and the risk portfolio.
- **Resource** - Resourcing entails the resourcing and execution orientated activities required to mobilise the risk management actions regarding the business change.
- **Lead** - This involves the definition of leading described in chapter 2.

- **Control** - This entails the monitoring and corrective action orientated management activities.

Note that the analysis is still kept central to the hub, but it is in fact the seed of the planning function.

(c) *Integration with other business change methods*

From point ③, the most important management method that requires integration is the change initiative under consideration.

The results of the market research (chapter 3) indicate the importance of risk management during the life cycle of the solution (Figure 38). The area in the life cycle where risk management is traditionally practised ranked highly in terms of the supplier's response. They did believe that where focus should be placed in the future in terms of integration with the business change cycle are:

- Identification of the need for improvement.
- Contingency development.
- Solution implementation.
- Operation.
- Solution phase-out.

At the transactional and functional levels, methods do vary, particularly from change type to change type. At the conceptual and abstract levels however, there is a consistency in terms of approach. If one considers (1) Winston's operations research methodology (Figure 4), (2) Watson's business systems engineering model (Figure 16), (3) the generic engineering model (Figure 17), Charette's risk management process (Figure 20), the traditional business improvement life cycle (Figure 57), etc., a common thread can be seen. Activities common to all business change initiatives are shown in Figure 68.

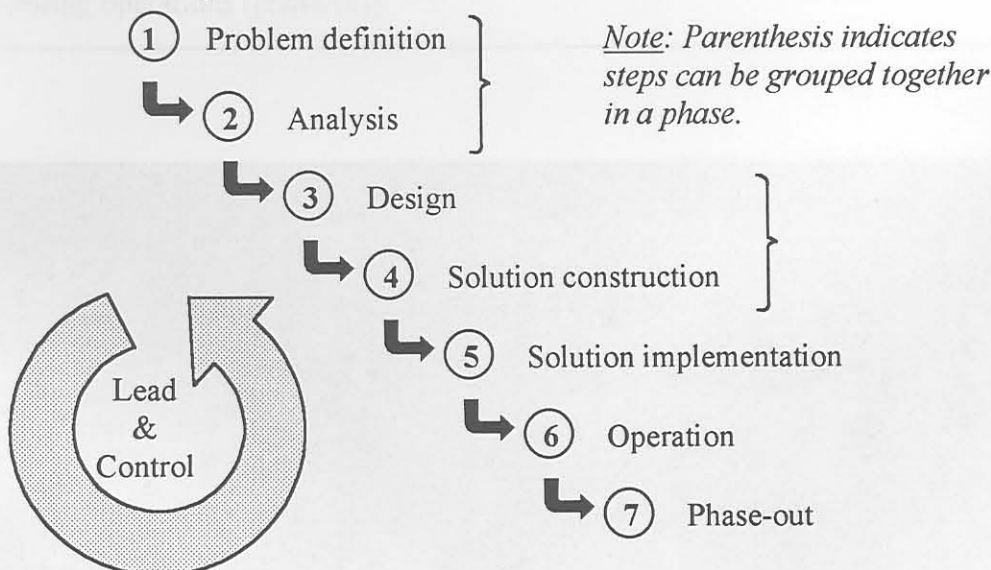


Figure 68 - Generic Phases of Business Change Initiatives

From the figure, the clear starting point is the business definition which may indeed be a business problem or perhaps an opportunity. The ensuing analysis involves the understanding of the situation under consideration. This may entail benchmarking, simulation, scenario planning or risk analysis. From the analysis, synthesis is possible in the design phase following which the solution is constructed. In some cases, design and construction may be very closely linked. The implementation phase is the culmination of the preceding activities where business change or transformation is enacted. While phases (6) and (7) are often neglected, attention is also required here. This was confirmed by the market research. Throughout the complete cycle, leading and cybernetics or control is ensured.

Figure 68 indicates that some steps could be grouped together into five distinct conceptual phases, namely:

- Analysis.
- Design.
- Change.
- Operations.
- Phase-out.

All the steps in Figure 68 will however be referred to during the synthesis as these were highlighted during the market research as being gaps in terms of risk management.

Using this model (Figure 68) as the basis for considering the integration between the risk management process and other solution generation processes, the task is more transparent. Risk analysis should be undertaken on an integral component of the solution analysis phase. Similarly the two design phases should coincide which includes the establishment of the management philosophy. Solution construction and implementation correspond closely with the resourcing phase in the risk management model. The solution phase-out phase is in itself a project of similar dimensions to the preceding phases (1) to (5), it is however critical in some instances that this be taken into cognisance before the solution sees the light of day.

Phase (6) of the business change cycle, namely operation is discussed in more detail later in paragraph (d), as it deals with point ④, i.e. the integration between business change risks and business operational risks.

Leading and controlling are two crucial management functions which are undertaken throughout the cycle, but plays a particularly prominent role during construction and implementation.

(d) Relationship between business change risks and business operational risks

This sub-section aims to understand the role risk management plays in the business change situation as opposed to the normal operational situation. Graphically from Figure 68, the difference lies in phases (1) to (5) and (7) as opposed to phase (6). The preceding text provides insight into risk management at conceptual level during business change. It is therefore worthwhile analysing contemporary theory regarding business risk management during operations (phase (6)).

A research project was concluded in 1995 which aimed to assess best practice in business risk management and then suggest a framework for managing risk [143]¹. While the report indicated it aimed to include the risks exposed to during change, the focal point was business operations. This being the case, it would allude to making the integration task easier under the assumption that the purported model is valid for business operations.

Two hypotheses that the study aimed to investigate was:

- Organisations realise the complexity of the risks they face.
- Organisations need more of a comprehensive approach for managing risk.

The results of the study indicated that the hypotheses held true which are consistent with the market research findings of this study.

The research put forward a framework constituent of 3 major facets, namely (1) a common business risk language, (2) an effective organisational control structure and (3) a process view of the business. This framework is summarised as follows:

(i) Develop a common business risk language.

For the purposes of integration and productivity, communication must be made seamless by means of a common language and understanding throughout the organisation. Arthur Andersen suggest the model in Figure 69 as a basis for a common language [143, p15].

¹ The research indicated in depth interviews with senior management at more than 40 global organisations based in North America and Europe. A further questionnaire was submitted to 3000 companies world-wide, but it is unclear what the response rate was like.

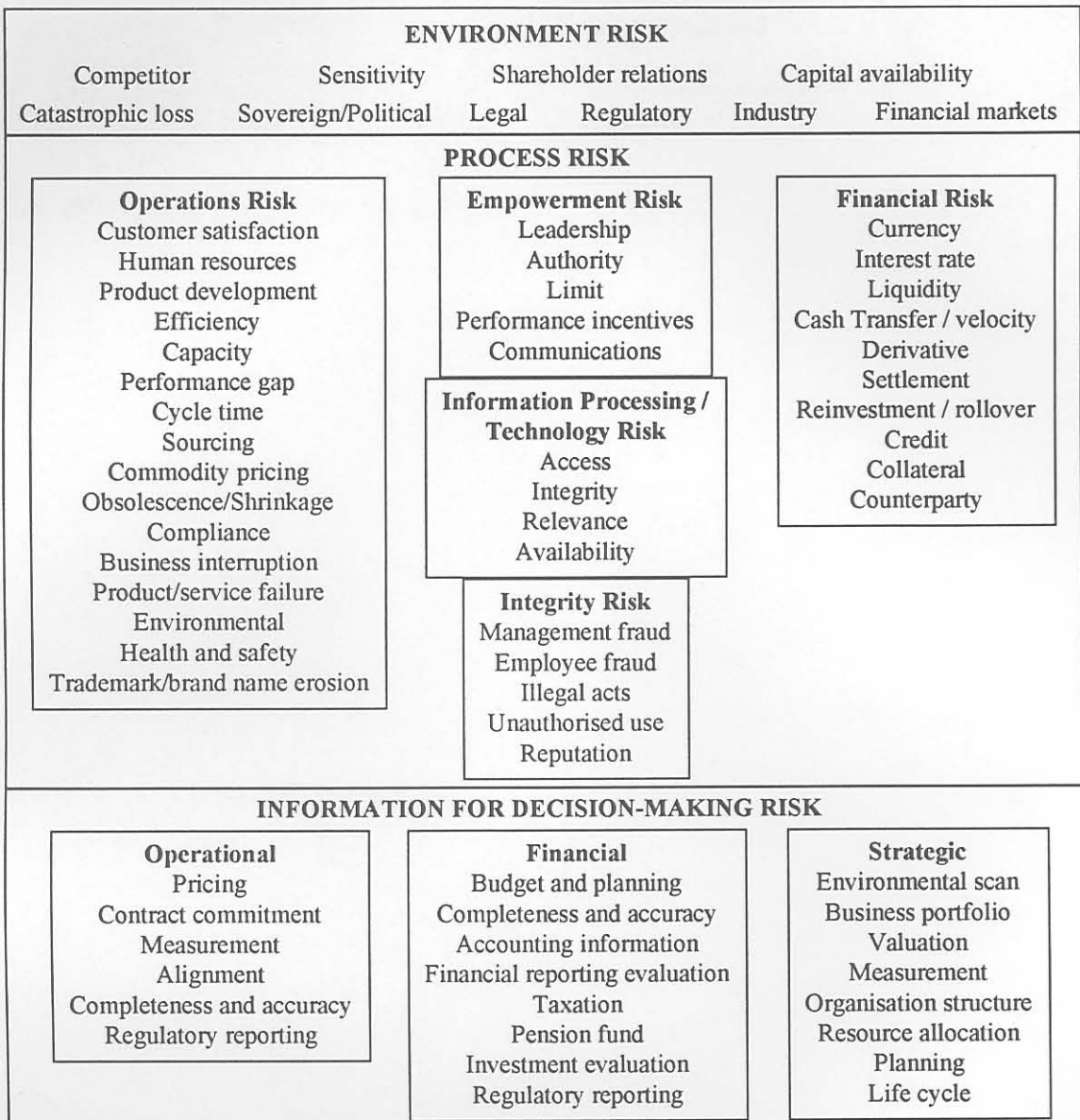


Figure 69 - Arthur Andersen's Model for a Common Language

In Figure 69, environmental risk pertains to “where these are external forces that could either put a company out of business or significantly change the fundamental assumptions that drive its overall objectives and strategies.” Process risk however, “arises when business processes do not achieve what they were designed to achieve”. The authors indicate that information for decision-making risk “arises when information used to support business decisions is incomplete, out of date, inaccurate, late or simply irrelevant to the decision-making process”.

(ii) Develop an effective organisational control structure

The authors indicate that an effective control structure will assist in anticipating risks and adapting processes accordingly. They define three levels of control, namely

- Strategic control (see Figure 71).

- Management control (see Figure 72).
- Business process control (see Figure 73).

These controls have a hierarchical relationship as shown in Figure 70.

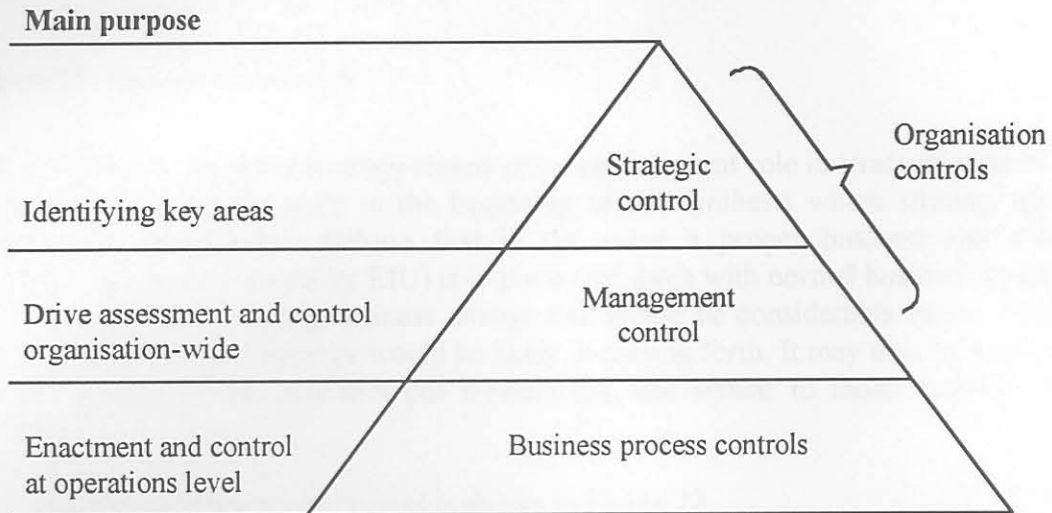


Figure 70 - Relationship between Business Risk Control Levels

The strategic controls are shown in Figure 71.

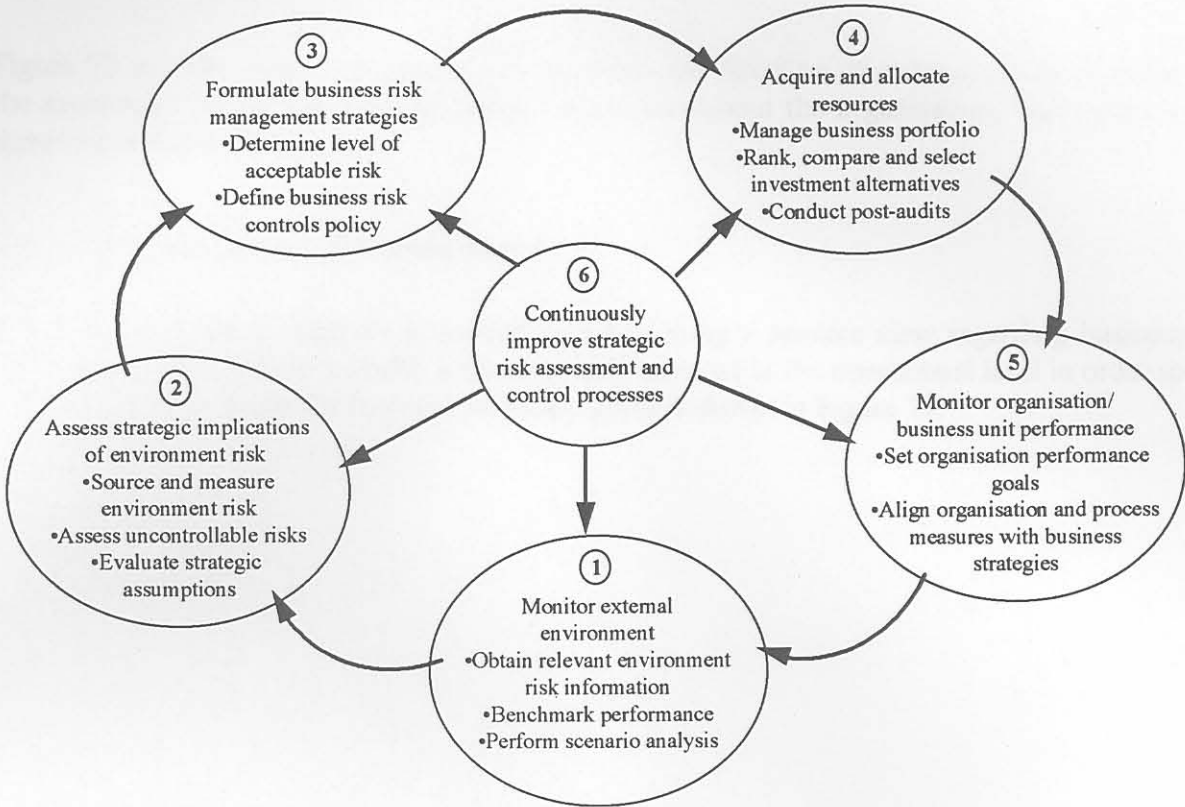


Figure 71 - Strategic Risk Controls

From Figure 71, business strategy clearly plays an important role in strategic control. This ties in closely with the rationale in the beginning of the synthesis where strategy also plays a pinion role. It therefore follows that in the event a proper business risk management framework (as put forward by EIU) is in place that deals with normal business operation, then the first steps in managing business change risk would be considerably easier. Not only will the task be easier, but synergy would be likely in coming forth. It may also be noted that some of the techniques and activities put forward are also similar to those detailed later in the chapter.

The model for management control is shown in Figure 72.

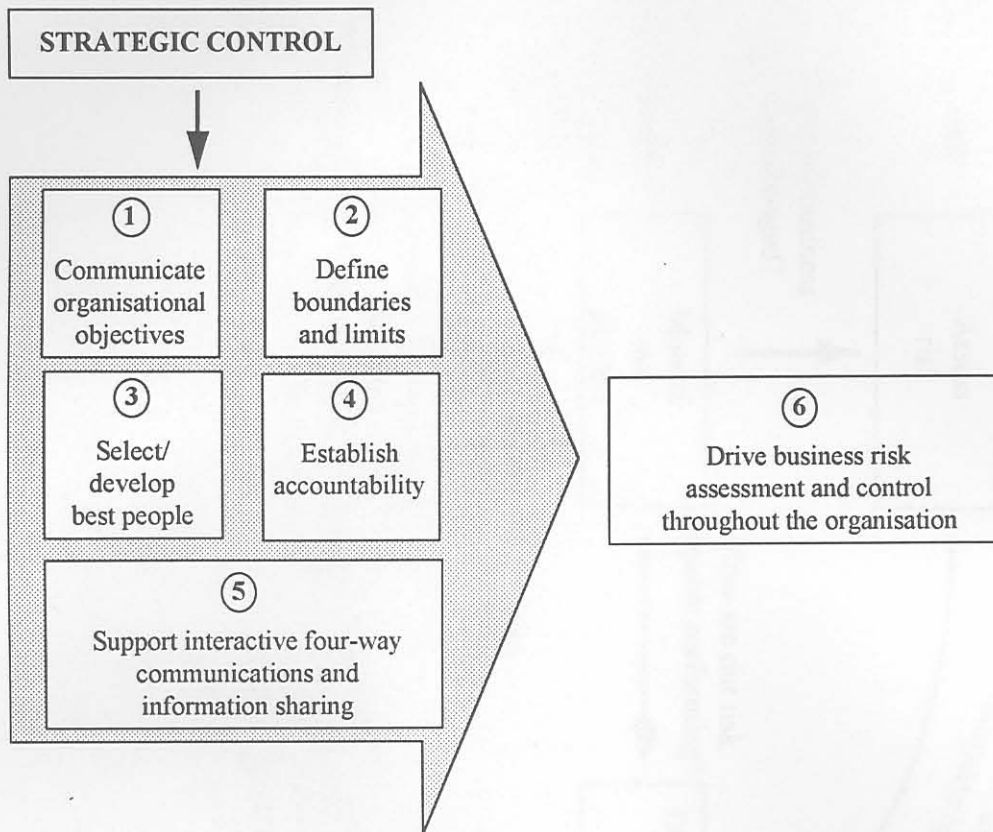


Figure 72 - Management Risk Control

Figure 72 indicates that management control takes the direction of strategic control, drives the assessment further and aims to enact control throughout the organisation. This operates therefore at the tactical level.

(iii) Create a process view of business control

The authors feel that emphasis is needed on establishing a process view regarding business risk management. This is in reality a set of actions required at the operational level in order to manage risk. The model for business process control is shown in Figure 73.

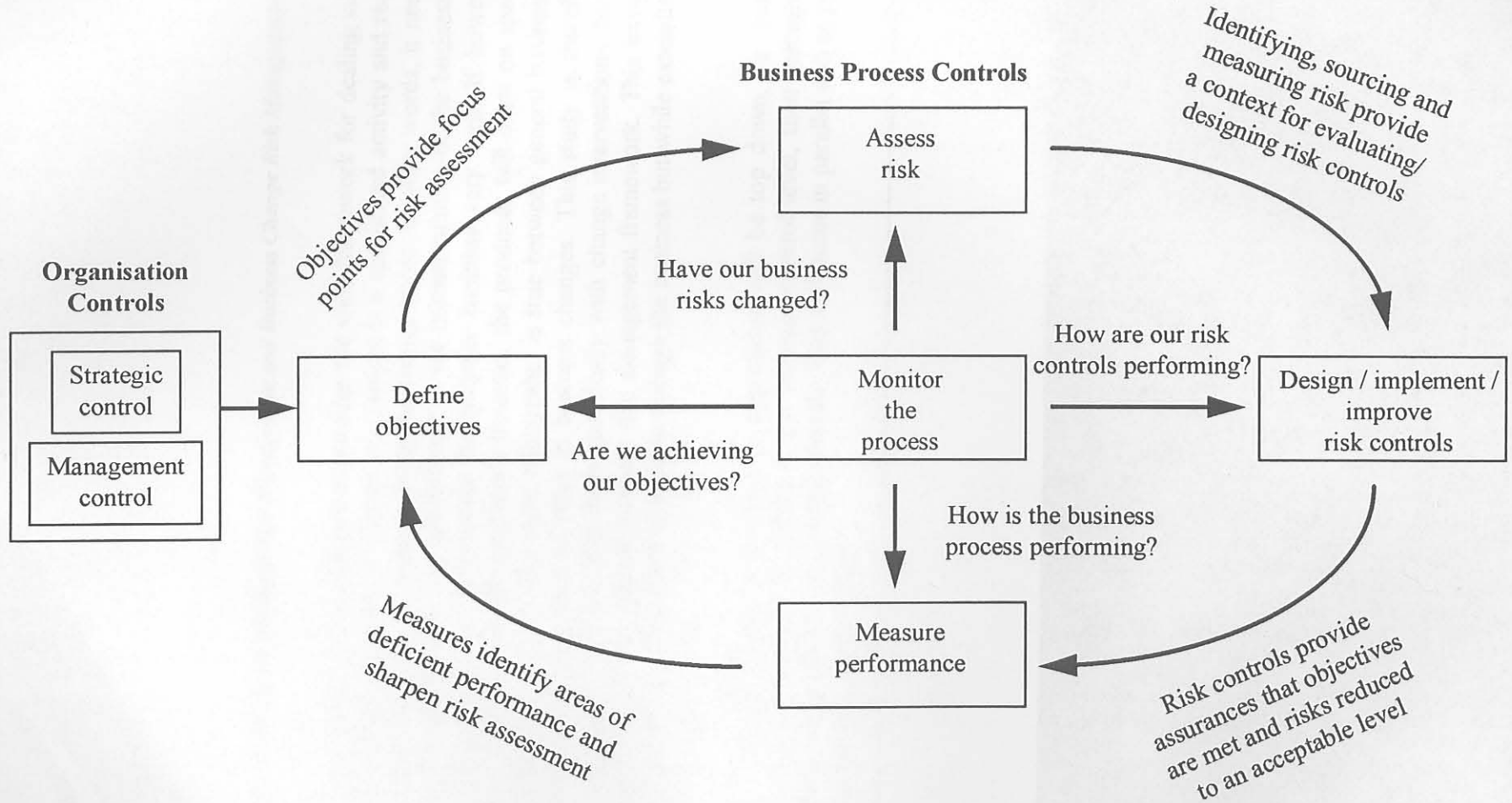


Figure 73 - Business Process Risk Controls

Figure 73 illustrates the important role business process controls play in business risk management. It is the engine where risks and business operations come together. It provides the enactment of objectives, the performance assessment and monitoring of success. It provides the knowledge base for learning and is effectively the risk expert system or heart of the organisation.

With the EIU business risk management model having been summarised above, its integration with business change risk management can be established. This is facilitated by means of Figure 74.

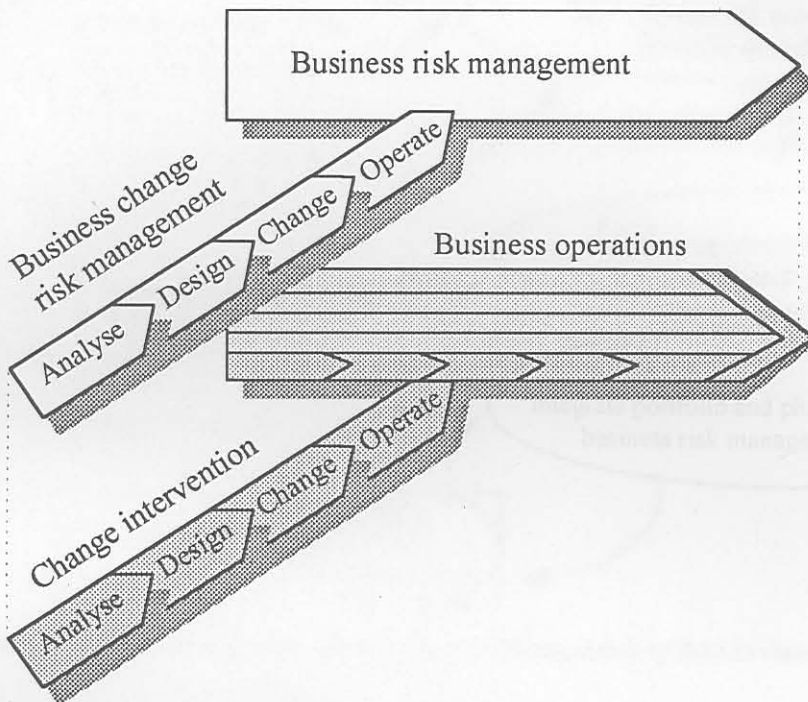


Figure 74 - Interaction between Business Risk Management and Business Change Risk Management

From Figure 74, business risk management provides the wide framework for dealing with all risks within the business context. A change intervention is a specialised activity and requires specialist resources and skills in order to bring the change about. In other words, it needs to draw on a set of competencies that are different to the normal running of the business. For example a polymer producer understands the polymer business very well. If however a business change is required in the producer's business, the producer will draw on specialist assistance such as a consultant. The same relationship is true between general business risk management and the management of risks in business changes. This study is therefore a specialisation of risk management that deals specifically with change interventions, but also integrates seamlessly with the general business risk management framework. This integrated approach provides business with a set of tools to manage the business but while extending the tool set.

The sequence of integration between the two approaches will be top down, i.e. business change risk management will first interact at the strategic control level, then management control and finally with the business process controls. This will occur in parallel and as part of the business change intervention itself.

It should be noted that while it is highly desirable for a business to have a comprehensive business risk management framework in place, very few businesses have this as was indicated by the researcher's market research as well as the EIU study [143]. Business change risk management can be implemented without this being in place. It will most likely require a little more effort.

4.4.2 Business change risk management process

Crystallising the reasoning of the previous section, it is possible to provide a generic process for the management of risk in business change initiatives. The high level process is shown in Figure 75.

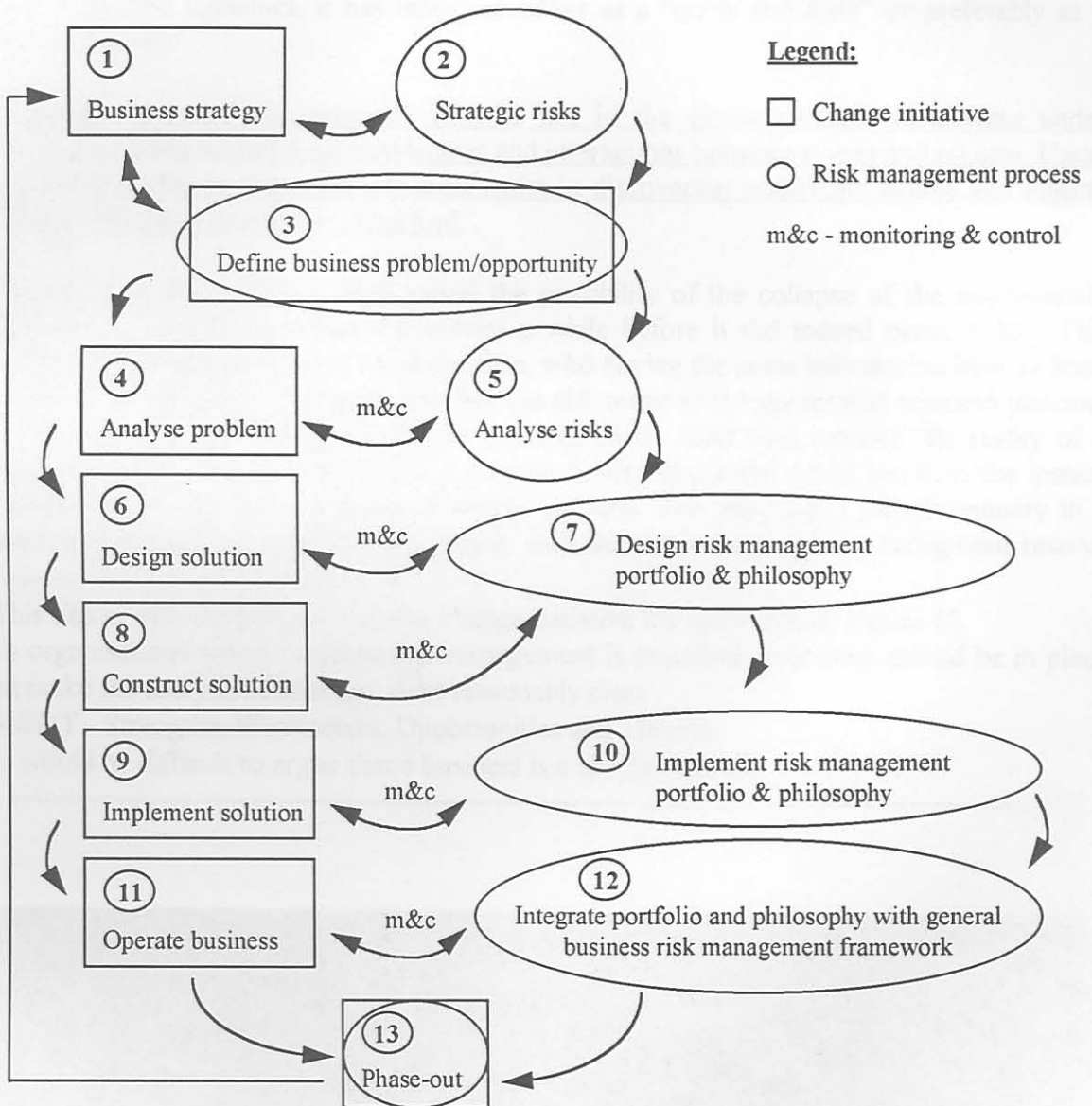


Figure 75 - High Level Generic Process for the Management of Risk in Business Change

Figure 75 illustrates the interaction between the business change risk management process and:

- The change intervention¹.
- Normal business operation.
- General business management framework.

The subsequent sections describe the phases of the business change risk management processes in more detail.

4.4.3 Derivation of strategic risks

This section describes the interaction of the process elements numbered (1) and (2) in Figure 75, i.e. *business strategy* and *strategic risks*.

As described in the chapter on fundamentals, strategic planning has taken on various forms over the last 20 years with its popularity waxing and waning. Presently, many businesses do not even spend much time in this area. Various methods are also employed in the derivation of strategy. It therefore follows that strategies and the strategic processes are inconsistent and not necessarily well attuned to making the strategic risks clear². An appropriate selection of methods and tools should assist in this regard.

At the strategic level, one of the areas that play a very important role is the environment. One of the most common techniques used to summarise the strategic situation in this regard is a SWOT analysis³. Experience with this technique is that it is generally used as an instrument to brainstorm the SWOT's that come to mind during the strategy session. In the context of today's business dynamics, it has more use either as a "quick and dirty" or preferably as a summarising tool.

In complex systems⁴ the greatest risks lie not in the obvious events or objects under consideration, but in the interdependencies and interactions between events and objects. Using appropriate methods and tools will even assist in discovering underlying events and objects that may otherwise have gone unnoticed.

As illustration, Royal Dutch Shell raised the possibility of the collapse of the communistic regime in the old Eastern Block countries a while before it did indeed occur [135]. This scenario was presented to the CIA at the time, who having the same information base as Shell dismissed this possibility. Schwartz ascribes the difference to the power that scenario planning has in uncovering plots and the threads between plots. Shell then realised the reality of a brand new risk - the collapse of the organised Soviet structures could result in the instant availability of a significant amount of energy sources. This would put the oil industry in a situation similar to the gold industry where, with the move from gold as recognised reserve

¹ This ties in with the generic business change initiative life cycle model, Figure 68.

² In organisations where business risk management is practised, processes should be in place that make the analysis of strategic risks reasonably clear.

³ SWOT - Strengths, Weaknesses, Opportunities and Threats.

⁴ It would be difficult to argue that a business is a simple system.

standard, many countries are selling off their gold reserves. The effect of significant demand reduction in the world surplus and resulting diminishing in the gold price. In South Africa where the gold mining industry plays a non-financial role, its greatest saviour has been the consistent devaluation of the Rand.

It follows that scenario planning plays a very important role, not only for normal strategic planning, but also for the identification of key risks and assistance with its analysis and contingency design.

While scenario planning is a very powerful tool for modelling the external environment, systems dynamics provides the ability to model the internal business dynamics. It must be noted however, that it can be used to complement scenario planning as well¹. Another emerging approach is eco-systems modelling which is also being used in strategy derivation [144]. Its benefits are however not significantly different to the approaches described in this study and has therefore not been included.

Mathematical modelling techniques as a strategic level modelling tool are limited as:

- They require a lot of accurate data which more often than not is non-existent, particularly at the strategy level.
- They become so complex that they may be cumbersome to manage.
- It is impracticable to continuously monitor the business dynamics and adapt the model accordingly².

The greatest use of such a tool at this level lies therefore in the analysis of a focused area that requires consideration, not the dynamics of the whole strategic environment or even a meaningful subset thereof, e.g. internal business processes.

The benefit of system dynamics modelling however, is that it provides for various levels of functionality. In order to facilitate understanding of the subject under consideration, various types of diagramming techniques are employed. The most common of these are the causal loop diagrams and the stock and flow diagrams [138]:

- Causal loop diagrams indicate causality.
- Stock and flow diagrams indicate more structural detail (particularly in respect of behaviour) than causal loop diagrams.

Some systems dynamic software offerings are able to seamlessly integrate these diagrams and then progress to the mathematical modelling behind the diagrams. One example of this is Vensim³. The advantage of this tiered approach is that interrelations in terms of the underlying interaction is clearly understood. It is then possible for areas where concern lies to be modelled in more detail.

¹ One of the most notable models developed using system dynamics was the modelling of the world in the late 1960's, early 1970's with specific reference to the sustainable reserves of oil. While this created significant controversy then, it has since been used to model a wide array of macro systems.

² This is only valid given present capability. Future advances should make this more lucrative.

³ Vensim is a registered trademark of Ventana Systems, Inc.

In summary, during process elements (1) and (2), the business strategy and strategic risks, the methods and deliverables shown in Table 47 should be used.

Table 47 - Strategic Level Methods and Deliverables for Risk Identification

#	Method/process	Deliverable	Comment
1	Driver analysis	Key business drivers	Helps establish business context
2	Establish strategic architecture	Vision, mission, strategic intent, business objectives	Helps establish business context
3	Scenario planning	Scenarios, key risks	
4	System dynamics modelling	Causal loops, stock and flows, simulation results	The usefulness of deliverables lies in descending order from causal loop diagrams

4.4.4 Definition of business problem or opportunity

This process element is critical, yet in practice there is seldom time spent on articulating exactly what the problem or business opportunity is. Various methods and frameworks do exist from the skimpy to the most detailed (e.g. statement of work in the military environment). This activity is important for the following reasons:

- The proximity of the problem/opportunity is identified.
- Stakeholders can be identified and their role established.
- Work can be scoped out.
- The nature of the problem or opportunity is understood.
- The problem or opportunity is articulated in a fashion conducive to broader communication and understanding.

If this process is not done properly, it in itself becomes a significant risk that will hamper activities during the change initiative and could even result in misalignment between delivery and the business needs. The method and deliverables of the process are described in Table 48.

Table 48 - Problem Definition Methods and Deliverables

#	Method/process	Deliverable	Comment
1	Problem/opportunity analysis	Problem/opportunity identification	-
2	Stakeholder analysis	Stakeholders and their needs	-
3	Project definition	Project mandate, method description, scope in terms of project and problem/opportunity	-

4.4.5 Risk analysis

This section refers to process element (5) shown in Figure 75. Once the business problem or opportunity is known and the strategic risks identified, the risk analysis can start in parallel with the analysis of the business problem (the change initiative process). From Figure 67, the

key elements are the risk identification, the risk estimation and the risk evaluation. The purpose of each key element is detailed as follows:

- **Risk identification** - This involves the identification and definition of the risks in the area under consideration.
- **Risk estimation** - This involves qualifying and quantifying the impact that the risk could have on the business.
- **Risk evaluation** - This entails the analysis of the various risk management options that are open for consideration as well as the recommendation for the most appropriate approach.

The three elements are considered in more detail in the following text.

(a) Risk identification

As with the definition of the business problem or opportunity, it is crucial that the risks are clearly identified. This means that the core risks are identified and not their symptoms or secondary risks. This is achieved by cause-effect analysis which is established in the manner provide by the causal loop diagrams. The importance of this exercise is seen in the light that it does not help to exacerbate the level of risk by incorrect risk identification. The problems that could arise if the identification is not done properly, include:

- The real risks are not managed as they are unknown.
- Effort and money is spent managing something that provides little value.
- The occurrence of risks that were not foreseen diminishes the credibility of the risk analyst or organisation.

Another approach to identifying risks in business change is by using a checklist. While the causal loop approach provides a path to the core risks, the checklist will assist in accelerating the risk identification process. Using the market research (chapter 3), the framework shown in Table 49 is recommended for the identification of business change risk. This list must not be confused with the framework provided for by Arthur Andersen as shown in Figure 69. The Andersen framework categorises business risks as relevant to business operation in general. These frameworks complement each other as put forward earlier.

Table 49 - Prioritised Framework for Sources of Risk in Business Change

FOUR KEY RISK THEMES			
<ol style="list-style-type: none"> 1. <i>No reliable methods and tools which are propagated by the lack of understanding regarding the impact of the change on the business.</i> 2. <i>Lack of focus on achieving business results manifested in poor greater organisational involvement.</i> 3. <i>Poor leadership throughout the complete change life cycle.</i> 4. <i>Not having empathy for the stakeholders' needs.</i> 			
Tier 1 Risks	Tier 2 Risks	Tier 3 Risks	Tier 4 Risks
<ol style="list-style-type: none"> 1. Lack of top management commitment 2. Poor communication 3. No focus on financial implications 4. Lack of customer focus 5. Poor vision 6. Ignore employee concerns 7. Poor change management attention 	<ol style="list-style-type: none"> 8. Implement without testing 9. Misalignment with strategy 10. Not anchoring changes in culture 11. Failure to appreciate risks 12. Not anticipating effort and energy 13. Wrong implementation method 14. No sense of urgency 15. Not consider holistic issue 	<ol style="list-style-type: none"> 16. Poor attention to innovation 17. Inappropriate tools 18. Misalignment of technique and paradigm 19. Take on too much 20. Innovate too slowly 21. No plan for short term success 22. Mis-use of techniques 23. No use of experienced specialist 	<ol style="list-style-type: none"> 24. Too much focus on analysing the current 25. Aim for minimal gains 26. Declaring success too soon

The framework provided in Table 49 was developed from the market research conducted as part of this study/ The four themes represent the four most important areas of risk in business change as crystallised by means of factor analysis. From the sample, four clear tiers of individual risks emerged which represents the groupings of risks as prioritised by the sample's responses. While the nature and risks differ per business and situation, the framework provides a benchmark from which to work.

It is further important that once the risks have been disseminated, they must be condensed into the critical few. This is achieved using two approaches:

- The cause-effect analysis described earlier.
- Clustering of common risks.

There must be caution that the risks are not over-clustered, as it may be difficult to derive the correct set of management actions during the risk evaluation process. The next process, risk estimation, will also assist in the prioritisation of the risks in terms of severity. The remaining insignificant risks can then be side lined from the remainder of the risk analysis process.

(b) Risk estimation

As discussed previously, the purpose of the estimation process is to establish the magnitude of the risks under consideration. These attributes can be quantified or qualified. Much of the available literature that focuses in this area assumes that the process to the estimation, and the process from the evaluation, requires less consideration. As discussed in the study this cannot

be the case. A myriad of theories exist which offer assistance in the qualification and quantification of risk¹.

In order for risk analysis to be successful in the business change context, a few principles should hold, namely:

- The analysis process should be understandable.
- The analysis process should be easy to use and maintain.
- Integrate easily with the change initiative methods and tools.
- Flexible enough to accommodate different estimation models and perspectives.

A wide range of estimation tools are on the market. The market research (Figure 45) indicated that there are two clear groups of tools that are preferred as shown in Table 50.

Table 50 - Profile of Preferred Risk Management Tools

Group	Rank	Tool	Typical Data Format
1	1	Market research	Statistics, qualitative information
	2	Forecasting	Numerical, statistical, qualitative
	3	Scenario planning	Numerical, statistical, qualitative
	4	ROI	Fraction
	5	RONA	Fraction
2	6	NPV	Currency value
	7	Outsourcing	Currency value
	8	Contracting	Currency value
	9	IRR	Fraction
	10	Portfolio analysis	Value, spatial position
	11	Simulation	Statistics
	12	Insurance	Statistics, currency value

While Table 50 illustrates the effectiveness of tools currently in use, it is possible that these techniques are not the most effective, given that the sample is valid and representative. The reason is that the sample and indeed the population may not necessarily be au fait with the more advanced and new techniques. This does not however, provide a problem as the estimation techniques will be situation and method dependent. The crux lies in taking the results of the risk estimation and comparing this with other estimation tool results. The value of the ranking of the tools as shown in the table lies in the guideline to the most popular current tools.

¹ Some techniques include (many of the following are the proprietary of the companies shown in brackets):

- Decision trees [64].
- Rapid methodology (Willis Coroon).
- Risk profiling (Sedgwick Risk Services).
- SWIFT (IRCA).
- MCDM.
- etc.

Benchmarking is a technique that is useful in helping to determine what:

- Thresholds in terms of risks should be.
- What best practices in terms of risk management interventions are.

This information can be gleaned from strategic, performance or process orientated benchmarking. The availability of a knowledgebase of best practices and measures will greatly accelerate the risk analysis process in general (not just risk estimation). The precept must however be that the knowledgebase is to encourage good practice and not become a rule book.

Table 50 illustrates the variability of the outputs of the various risk estimation approaches. This indicates that in order to be able to compare “oranges with apples”, a normalised approach is required.

The approach proposed for integrating the various risk estimation results, is the normalised scorecard. This is illustrated in Figure 76.

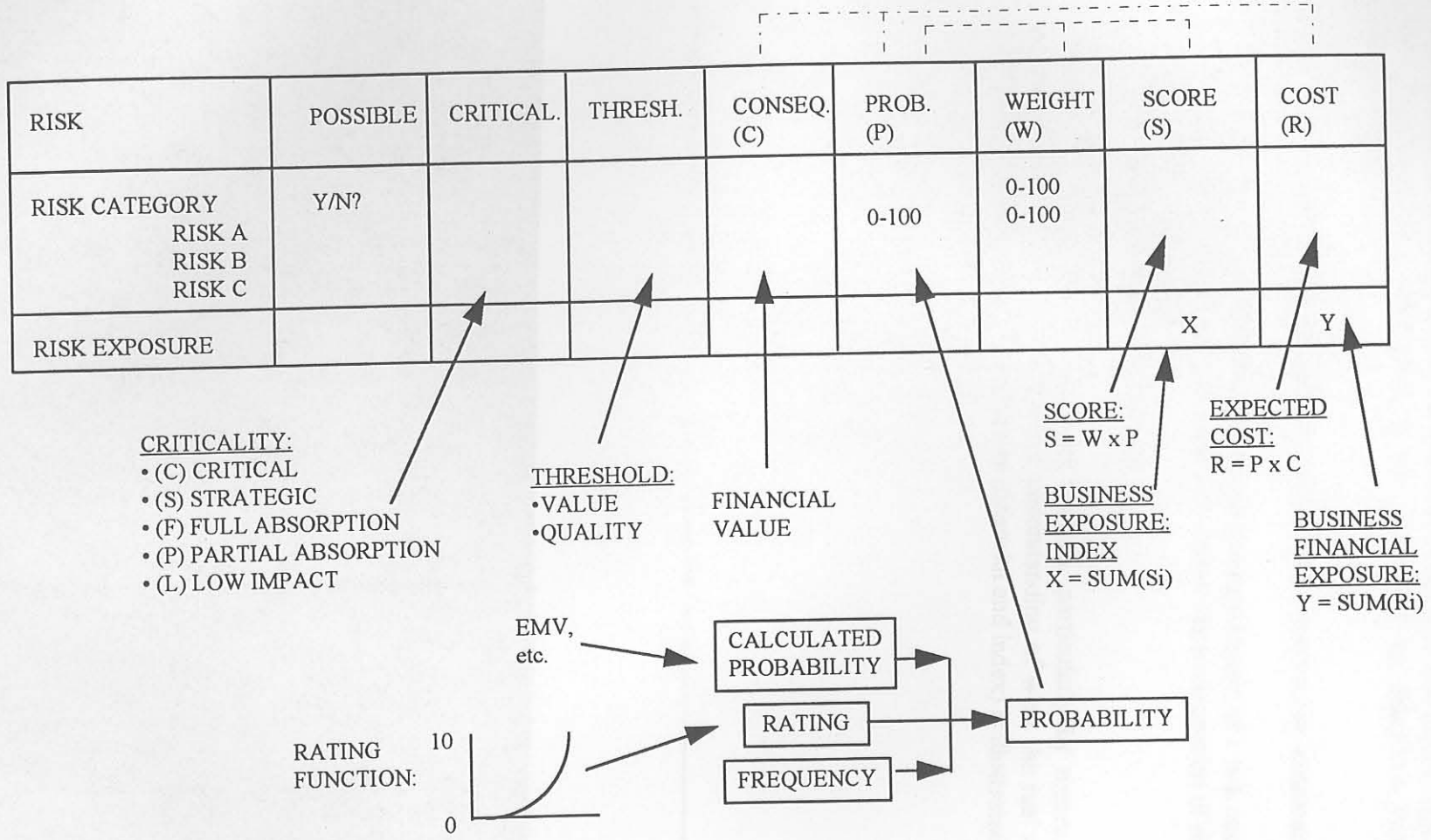


Figure 76 - Normalised Risk Estimation Scorecard

The scorecard provides for 2 methods of estimation, namely financial (COST) and index based (SCORE). They both work off the probability of risk as indicated in the scorecard. The financial exposure directly impacts on the NPV and IRR of a change initiative. This is illustrated by means of Table 51.

Table 51 - Business Initiative Attractiveness Calculation

Revenues / Costs	Period 1	Period 2	Period 3	Period 4	Period 5
1. Income					
2. Savings					
Total cash Inflows:					
3. Expenses					
4. <i>Risk exposure</i>					
5. <i>Cost of risk management</i>					
Total cash outflows:					
Total net cash flows:					

Referring to Table 51, one of the traditional approaches to evaluating a project's attractiveness is by means of IRR, NPV and or payback. In these methods, risk is brought in by means of putting in a safety factor on the rate of return which could result in unnecessarily high discounting. It follows that the reverse is also possible. This method is able therefore to provide a direct relationship between risk and the financial attractiveness of a business intervention.

It can be noted that the same result could be achieved by using the EMV approach [127] and discounting risk directly into the revenues and expenses. In this instance the magnitude of risk is not itemised separately. Here caution must also be made to ensure that the cost of risk management is accounted for. It is however possible to use EMV logic in the derivation of risk exposure and probabilities in the scorecard as described later. This method is recommended.

The index based approach provides a useful management tool in instances where:

- It is difficult or impossible to establish the financial impact of a risk occurrence.
- A financial quantification is not important, rather the minimisation of risk is.
- Many "soft" risks abound.
- A quick assessment needs to be made.

This method allows for the sensitivity analysis, particularly by means of weighting. This contributes significantly to an objective understanding of what the real risk drivers are. The relationship between the two dimensions (financial and index) is illustrated in Figure 77.

Type of information available	Quantitative	Hybrid evaluation but with a financial focus	Financial evaluation
	Qualitative	Index based evaluation	Hybrid evaluation but with a qualitative focus
		CI PR VSR	ER SV FI
		Level of Business Intervention	

Figure 77 - Relationship between Financial and Index Based Evaluations

From Figure 77, the higher level the business intervention, the more the need for financial evaluation methods and vice versa. The index method could typically be more appropriate in a TQM project for example.

The scorecard provides for the following functionality:

- Risks are divided into meaningful categories in order to cluster risk trends and profiles.
- The possible column serves as an aid in the identifying process. All risks are left on the scorecard until it is determined how possible the risk is by means of the Delphi technique. The non-possibles are then removed.
- The purpose of the criticality column is to provide a qualitative estimation in terms of the criticality. While this information is not pertinent, it assists in providing a first draft in terms of the importance of risk. This is particularly useful in workshop format where participants with limited time are able to provide direction in terms of where risk estimation efforts should be focused. The criticality indicators are:
 - Critical - This risk poses a very real threat both in magnitude and immediacy. Realisation of the risk is both likely and will have serious consequences.
 - Strategic - A strategic risk holds the likelihood of serious consequences but the immediacy is not necessarily high. For example, if risk materialises, consequential damages could be R100 million. The frequency of occurrence may however, only be once in 250 years.
 - Absorption pertains to the level of impact meaning the degree to which the business will absorb the risk in the event of its occurrence. Full absorption means that the impact will be reasonably high although not strategic. Partial absorption will have an average impact.
 - Low impact is self explanatory.
- The threshold value is also an aide variable. It sets the level of risk beyond which attention will be required. This may be expressed in terms of a value or quality description. This is the limit beyond which a risk becomes unacceptable.
- Consequence (C) is an expression of the financial exposure, should the risk come to fruition.

- Expected cost (R) is the product of probability (P) and consequence (C) (see Equation 7). This cost is the expected risk weighted exposure which companies use as the basis for NPV as example.

Equation 7

$$R = PC$$

- Business financial exposure (Y) is the sum of the individual risk weighted financial consequences of risk, shown in Equation 8. This is the value that should be included in the project evaluation sheet as shown in Table 51.

Equation 8

$$Y = \sum_{i=1}^n R_i$$

where: n is the number of risks.

R is the risk weighted cost of risk i .

- Probability refers to the likelihood of the risk occurring. This can be expressed in three ways as shown in Figure 76. It could be a calculated probability using any number of analysis techniques available, e.g. the hazard rate (λ) for an equipment item.

A recommended approach for calculating the risk impact and its probability is the EMV approach (see appendix B and earlier text). The consequence and probability is then the value derived from the EMV calculated risk weighted value and probability.

The probability could also be based on frequency of occurrence per year or the rating function could be used, which is described as follows.

Rating refers to the likelihood of a risk realising. This does not necessarily equate with the statistical likelihood or probability. It is only the case if the estimation technique provides this - for example the results of a simulation.

The recommended tool here is the rating function as shown in Figure 78. As purported earlier, a means of integrating dissimilar and or risks that are difficult to estimate must be used. This is what the rating function allows.

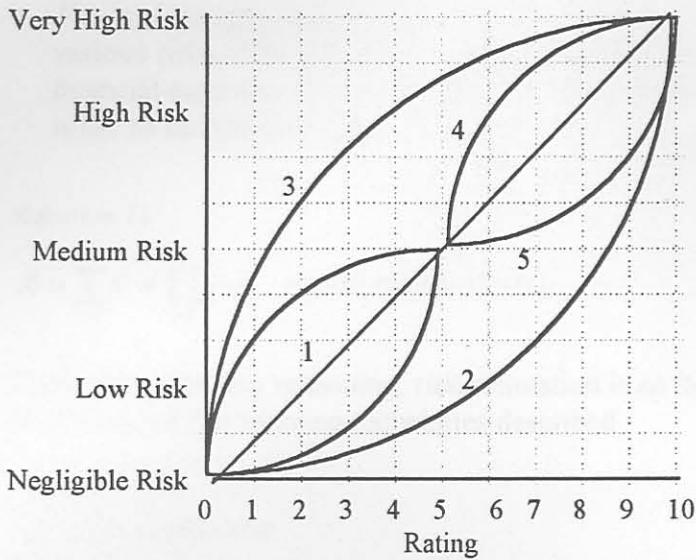


Figure 78 - Standard Rating Functions

Figure 78 illustrates 5 standard rating functions. A generic framework provides for a simple yet effective application. The y axis ranges from very high risk to negligible risk. The x axis ranges from 0 to 10. The precept of the relationship between the axes is, the higher the risk, the higher the rating or value.

Function 1 provides for a standard linear function where the degree of risk is directly proportional to the rating. Function 2 correlates with the parabolistic curve where only quadrant 1 is valid. The equation for this is given by Equation 9.

Equation 9

$$y^2 = 4ax, x \in [0,10]$$

The behaviour of function 2 implies that the impact of the risk accelerates very quickly. The opposite characteristic is valid for function 3.

Function 4 illustrates the behaviour of a risk where as a low risk it quickly gains importance, but as the risk becomes higher, the weight decelerates. The shape of the curve correlates with the standard cumulative lognormal failure distribution. Again, the reverse holds true for function 5.

The functions provides a generic framework for the curve. It is possible to alter the shape of the curves by changing the value of the constant, for example a in the parabolistic function. Once the behaviour of a risk has been correlated with a function, the function is fairly insensitive to minor changes in the values of the constant. This is primarily because the value taken from the x-axis is in integer form between 0 and 10. The net effect is even less sensitive if the weight is low as described further on. In the case where the weight is a maximum of 100 and the estimator is out by 1 integer point (on the x axis), the error is not very high considering that best estimate is being used to evaluate the risks across the board.

Note, that the rating function is to be employed as a tool for evaluating the probability of the financial exposure, the rating must be expressed as a percentage.

- The weight (w) variable relates to the risk category (first column)¹. The purpose of this is to highlight the importance of the certain categories of risk over others. The degree of the weight can vary from 0 to 100, but in practice a scale of 0 to 50 has generally been sufficient.
- The score (s) (or relative importance) of a risk is obtained from the product between the probability and the weight. As illustrated by Equation 10.

Equation 10

$$s = wp$$

- The business exposure index (X) (see Equation 11) represents the cumulative score of the various risks. The higher the value, the higher the risk exposure of the business. Like the financial exposure (Y), it is used as a value from which to bring risk management actions in order to reduce the value.

Equation 11

$$X = \sum_{i=1}^n s_i = \prod_{i=1}^n w_i p_i, \quad n \text{ is the number of risks}$$

From the preceding reasoning, risk estimation is an iterative process. The iterations are limited by the use of the focusing techniques described.

(c) Risk evaluation

Risk evaluation pertains to the generation and evaluation of alternatives for management action aimed at the minimisation of risk exposure. These actions relate to any effects of the change initiative whether during or after the business change exercise.

It is possible to provide a general categorisation of the type of management attention required as proposed by EIU [143, p30]. They put forward the categorisation based on the relationship between the likelihood of the risk and the risk's significance as shown in Figure 79.

¹ It is possible to relate the weight variable to the criticality type as well.

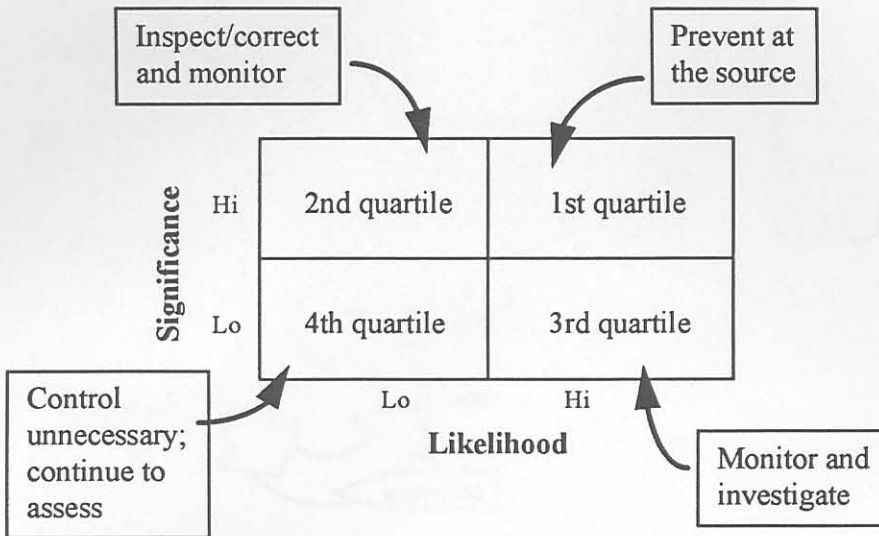


Figure 79 - EIU's Model for Business Controls

The EIU indicate that the most serious group of risks (the first quartile) require (1) avoidance, (2) transfer or (3) preventative actions. Avoidance typically refers to the discontinuation of activities or objects that give rise to risks. Transfer strategies involve moving some exposure to another party via mechanisms like insurance, strategic alliances, etc. In the first quartile avoidance and prevention must be undertaken at the source. The “lesser important” risks (quartiles 2 and 3) can use inspect and correct techniques where it may be acceptable to put in strategies downstream from the sources of risk. Fourth quartile risks do not require management attention and it is prudent to remove unnecessary controls that were designed for the risks if they were indeed instituted.

In general, four categories of management techniques can be used, described as follows¹:

- Elimination entails the removal of the source of risk.
- Prevention entails the prevention of the risk materialising, i.e. the source of risks still exist, but its occurrence is prevented.
- Two general mitigation categories exist, namely transfer (as described earlier) and other management techniques. The end result of mitigation is that the consequences of risk occurrence is alleviated somehow.

The market research revealed 3 levels of management techniques generally employed to manage risks in business change. These techniques cut across all the change management types. These 3 levels based on their perceived effectiveness is shown in Figure 43. In general, the 8 most important techniques are:

- Focus on delivering benefit to customers.
- Strong committed leadership.
- Ensure a vision is established.
- Put performance measures in place.
- Align initiatives with business strategy.
- Ensure high levels of communication.

¹ This varies slightly from the EIU model shown in Figure 79.

- Up-front cost benefit analysis.
- Address employee needs.

The above list clearly ties in well with the management of the major risk themes shown in Table 49. Like with the risks that are situational, it follows that their management actions will also be situational.

In devising a management strategy, it is important that the principles described in chapter 2 are taken into consideration. The starting point is value or additional value generated. One of the most important techniques that emerged over again regardless of the business change type was customer involvement. This brings in the importance of value generated and the corresponding alignment with customer perceived utility. At the macro organisation level the dynamics between risks and management actions are put forward with the assistance of Figure 80.

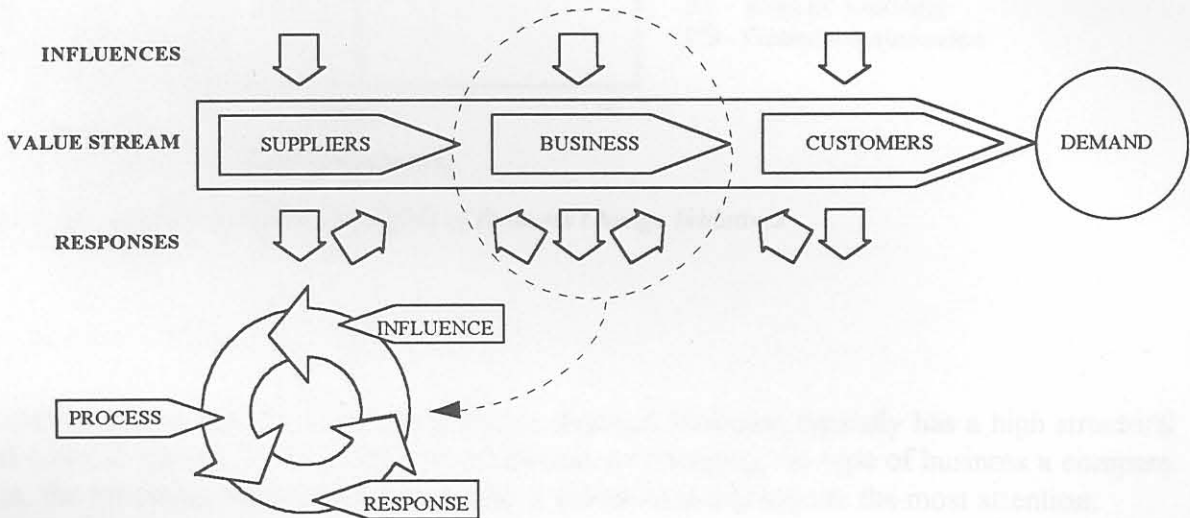


Figure 80 - Business Dynamics and Risk Management

Figure 80 illustrates that a business is an integral part of its environment. Systems theory indicates that it is influenced by external factors, the largest being those upstream (suppliers) and downstream (customers). It then processes these influences and in turn inflicts a response on its environment. This then induces a similar cycle from its environment and the cycle perpetuates as it is assumed to function as an open system. It follows therefore that a management strategy devised to address the risk in business change (and clearly also in normal operations) takes cognisance of this.

Some of the factors per change type are discussed.

(i) Financial optimisation

This type of change type does not necessarily change the physical structure of an organisation and would have a limited effect on the culture of its employees as shown in Figure 81.

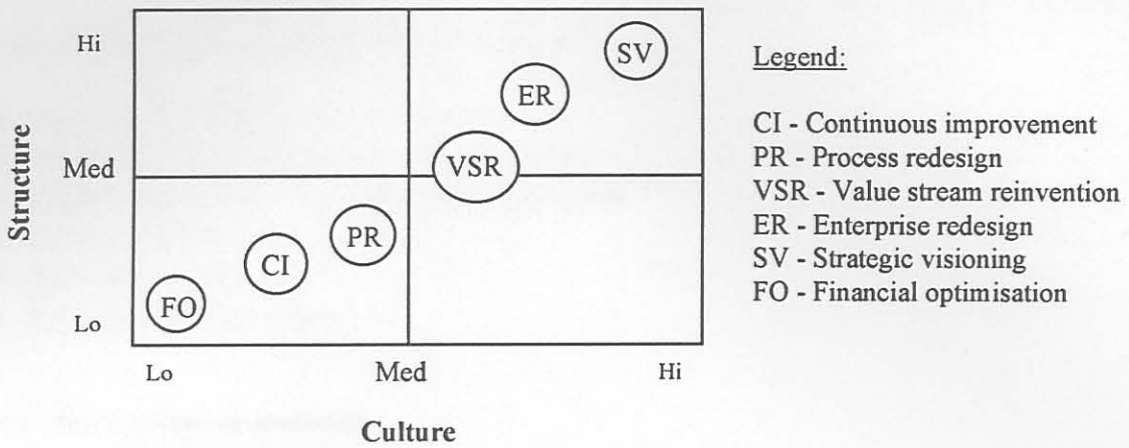


Figure 81 - Structural and Cultural Impacts of Business Change Types

The main aim of financial optimisation is to, with the use of a range of financial instruments, maximise income for the organisation; but off the existing operational base. This may involve obtaining favourable tax directives, setting up offshore companies, etc. The most important considerations at this level are:

- Consideration of regional and international law and their trends.
- The management strategies do not taint the raison d'être of the business.

Compared to other business change statistics, financial optimisation is attractive as illustrated in Figure 82. Financial leverage can be very high with a reasonably small amount of employee effort. Risk management should however, ensure that “financial engineering” does not impact negatively on the main line of business.

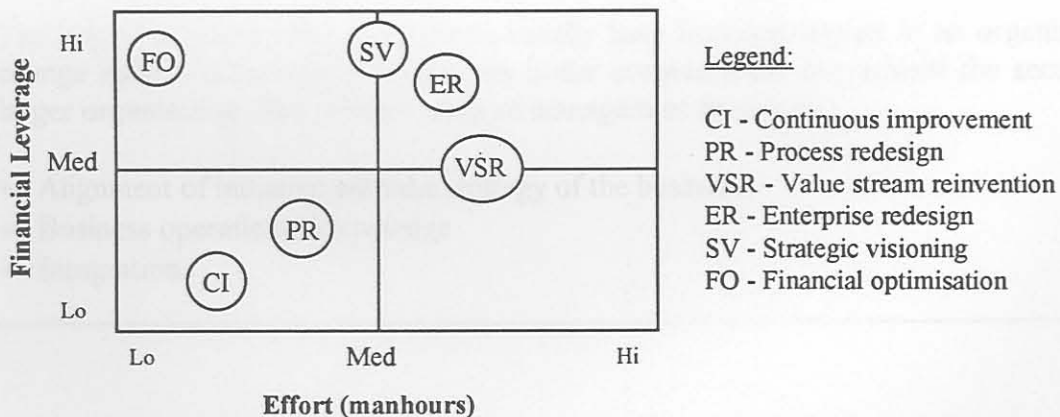


Figure 82 - Financial Leverage vs. Effort of Business Change Initiatives

(ii) Strategic visioning

In stark contrast with financial optimisation, strategic visioning typically has a high structural and cultural impact. As this change type focuses on changing the type of business a company is in, the following areas of risk management would normally require the most attention:

- Managing the mindset of the key players from within the organisation.
- Ensuring that all the key information is made available about the area where the visioning is being undertaken.
- Ensuring that the right competencies are gathered both for assisting with the change and for operating in the new way.
- At this level there are often windows of opportunity and accordingly execution should be ensured.
- The nature and individuals or groups involved in the partnership arrangements.
- Information security.

(iii) Enterprise redesign

This involves the redesign of current business or expansion of opportunities. The key areas that would require management attention are:

- Ensuring key information is available.
- The number and competencies of resources.
- Capital acquisition and cash flow management.
- Partnership management.
- Information security.
- Project implementation.

(iv) Value stream re-invention

This is primarily internally focused where the aim is end to end redesign of the way the current business operates. This is however, given that the structure of its interaction with the external world remains reasonable unchanged. This would follow that the most important areas for attention would be:

- Paradigm management.
- Business knowledge.
- Leadership.
- Setting stretch targets and achieving them.
- Involving the various stakeholders.
- Change in measurement.

(v) Procedure redesign

The impact of these change initiatives usually have localised impact in an organisation. The change itself will be radical in the area under consideration, but against the security of the larger organisation. The primary areas of management focus are:

- Alignment of initiative with the strategy of the business.
- Business operational knowledge.
- Integration.

- Ensuring implementation is affected and due attention received.

(vi) *Continuous improvement*

Continuous improvement initiatives typically have a low structural and cultural impact (Figure 82). Accordingly, leverage and effort is low but so is risk. Areas generally requiring most attention in terms of risk management are:

- Sustained employee commitment to ongoing improvement.
- Alignment of initiatives with business strategies.
- Ensuring that due management attention is achieved.
- Technical flexibility.
- Measurement.

Once a management strategy has been established, it must be:

- Described.
- Placed into the scorecard framework to evaluate its impact on the risk exposure.
- Its actioning must be confirmed against other management alternatives (in order to ensure a common baseline and understanding)

Bringing all the risk management actions together requires an extension of the scorecard. What becomes available is a portfolio of risk management actions aimed at reducing the risk exposure of the business as a result of the business change. The evaluation scorecard shown in Figure 83 shows the extension of the scorecard.

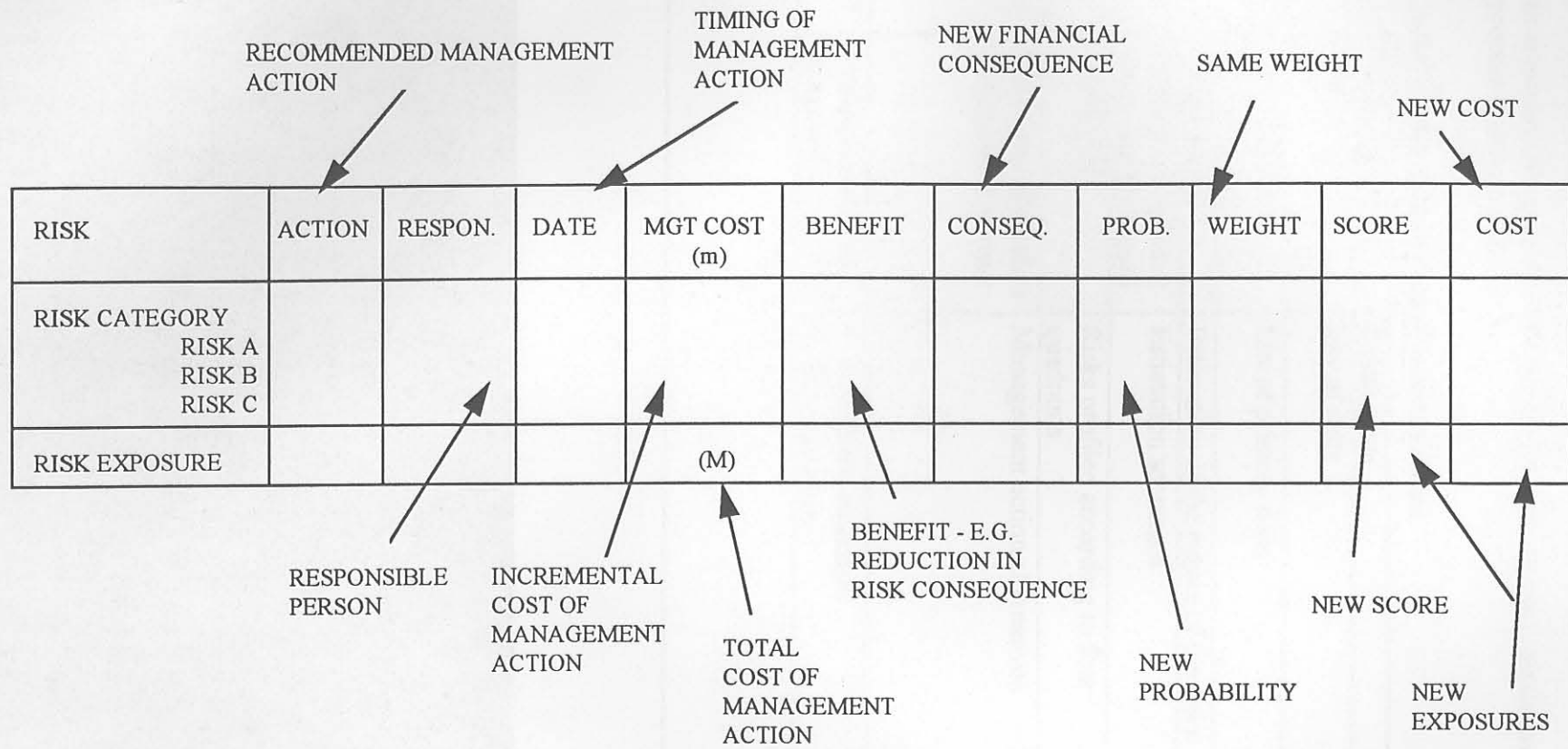


Figure 83 - Risk Evaluation Scorecard

In populating the scorecard and optimising the risk portfolio, it is worthwhile aiming to identify common initiatives in order to eliminate “excessive” actions while achieving synergy. This is described in more detail in the next section.

Columns 2, 3 and 4, namely Actions, Responsible and Date relates to a standard management action sheet. The Management Cost column indicates what the cost of the risk management action is. This might be the insurance premium or the external consultant cost as example. It is not very common that organisations cost efforts where internal manpower is required. This is still a cost, even if it is an opportunity cost. The remaining 6 columns perform the same purpose as the last 6 columns of the estimation scorecard (Figure 76). They establish the new values with the revised level of exposure. This is an iterative process in order to optimise the exposure.

The total cost of the management actions is given by M , where M is expressed as Equation 12.

Equation 12

$$M = \sum_{i=1}^n m_i$$

where: n is the total number of risks.

m_i is the cost of management action(s) attributable to risk i .

In summary, the methods and the deliverables of the analysis process in the risk management process is shown in Table 52.

Table 52 - Risk Analysis Methods and Deliverables

#	Method/process	Deliverable	Comment
1	Identify risks	List of risks	Use of causal loops of risk check-list
2	Reduce risks	List of primary risks	Use of causal loops or clustering
3	Estimate risks	Estimation of the nature of the risks	
4	Establish normalised estimation scorecard	Estimation scorecard	Use benchmarking for best practice inputs
5	Profile risks	Risks profiled according to four quadrants	(See Figure 79)
6	Determine alternative management actions	Management action alternatives	Use guidelines provided in the section above. Include life cycle analysis. Use benchmarking for best practice inputs
7	Establish evaluation scorecard	<ul style="list-style-type: none"> • Evaluation scorecard • Risk exposure 	

4.4.6 Design risk management portfolio and philosophy

This section refers to process (7) of Figure 75.

As shown in Figure 84, there is an optimal region where the level of management cost justifies the level of risk exposure. Even if the best decision-making information is available, the degree of management attention will vary between organisations and the type of individuals involved. The driver for this behaviour is primarily the organisation's or person's risk propensity.

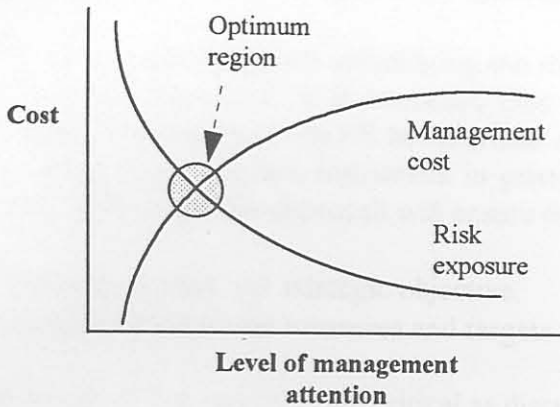


Figure 84 - Risk Exposure vs. Management Cost

The optimum region is governed by the nature of the risk portfolio, the organisation's risk propensity and the organisation's risk philosophy. The two key instruments required to establish the risk portfolio are the evaluation scorecard (Figure 83) and the portfolio itself (Figure 79). In broad terms the scorecard aims to drive efficiency of the risk management actions, while the focus of the portfolio is effectiveness.

The nature of the organisation's risk propensity and the risk philosophy will be tightly coupled as the philosophy will be the result of the organisation's propensity. As described during the analysis, risk propensity is not a uniform phenomenon as propensities vary across organisational levels and functional designations [85]. While managerial levels are less averse to risk, they tend to take decisions that suit their career needs [87].

Taking note of the propensity variances, it is prudent for the organisation to establish an objective and suitable risk management philosophy. The philosophy therefore needs to be driven by two key factors, namely the business strategy and the business culture. If a general business risk management structure is in place, then it follows that this philosophy will be in place. This cannot however be cast in stone as the business change may indeed necessitate the change in culture and hence require a new governing philosophy. One of the key factors that literature and practice raised as pertinent to significant business change was the "firing" of the management team. This per definition, implies a mindset change and hence philosophy change.

There are three ways of dealing with problems associated with risk propensity. The first is the surgical removal of leadership as discussed in the preceding paragraph. The second is changing the way people behave by changing their context. The most effective approach to

achieve this is the “unwritten rules” described in chapter 3 [51]. The basis of this is that measurement governs behaviour. The third and most common approach is knowledge transfer whether by means of informal communication or by formal tuition.

Core to the philosophy is an understanding of the risk environment and how the organisation needs to manage risk in relation to its environment. A concept that provides useful insight in this regard is Charette’s risk helix (Figure 19). This helix helps to answer the following questions:

- The linkage between risk management and the competitiveness of the business.
- The importance that risk plays in the business.
- The effort required to manage the risks.
- The type of business management philosophy that is suitable in order to achieve a certain level of risk management.
- Reactive versus proactive approach.

It is then possible to translate these issues into a context that is understandable and meaningful to all who have to address the risks in the business.

As described previously, risk philosophy serves as a guideline that gives focus where formal rules and processes are void, particularly in a highly empowered environment.

Once the intervention has been designed and the philosophy established, the management of the risks during the operation of the business once it has been changed must be designed. The framework for this design is supplied by EIU as described previously. The design is based on the three levels of control namely, strategic, managerial and business processes. The frameworks are shown in Figure 71, Figure 72 and Figure 73 respectively.

The key to integrating and assimilating the risk interventions into normal business practice is the balanced scorecard. It is conceded that other forms of measurement systems could be used, but the benefits of the BS as described earlier promises not only to provide an excellent performance management instrument in general, but also to accommodate risk management actions with ease. This approach will ensure that the risk intervention is:

- Tied into a clear, yet strategic objective.
- Assigned transparent measures and targets for progress monitoring.

The design of the measures are critical as discussed earlier. This includes the design of:

- The risk management measures.
- The other business measures, but based on the *new paradigm*.

In the former, the measures relate directly to the risk management actions, while the latter is good practice in managing the risks of business change itself. This is substantiated by the market research where 54% of the respondents indicated that current change initiatives generally focus on changing behaviour of people. Only 29% felt that this was not the case (see Figure 46).

The methods and deliverables of the portfolio and philosophy design phase are summarised in Table 53.

Table 53 - Risk Management Portfolio and Philosophy Design Methods and Deliverables

#	Method/process	Deliverable	Comment
1	Optimise risk portfolio	Risk portfolio	Risk portfolio in conjunction with evaluation scorecard
2	Establish risk philosophy	Risk philosophy	Use the risk helix and the implications of the portfolio
3	Design operational risk management processes	Operational risk management processes	Use EIU framework as a baseline. Use benchmarking.
4	Design performance management requirements	Performance management structures	Use balanced scorecard and unwritten rules approaches. Use benchmarking for target setting.

4.4.7 Implement and integrate risk management portfolio and philosophy

This sub-section puts forward the processes (10) and (12) of Figure 75, namely the implementation of the risk management portfolio and philosophy and the integration with the operational business risk management processes. The implementation has to take the following into consideration:

- Nature and timing of the change intervention design and implementation.
- Nature and timing requirements of the business change risk portfolio and accompanying philosophy.
- Other risk management structures in place.
- Organisational constraints, e.g. resource limitations.

The implementation approach is situation dependent and would rely heavily on the risk management action. As example, the risk management actions could range from the conducting of an education session to the taking out of patents¹.

Implementation must be executed according to normal management practices, which would typically take on project management dimensions. Resourcing should be highlighted however. At this level the organisation is dealing with risks that could make a significant difference to the business. It is therefore sensible that not only are the risk management actions properly designed, but that they are suitably resourced. It often happens that an organisation prefers to use resources that require no short term cost or effort which can end up being “penny wise; pound foolish”.

The integration with business operational risk management must be executed according to the approach described in paragraph (d), p178. This is however dependent on whether the

¹ The last example is a risk in itself. While a patent aims to prevent other parties gaining from a company’s labours, it does actually place the design in the public domain. It is often not too difficult for another organisation to alter a design or copy directly and risk litigation.

Table 54 - Integrated Risk Management Framework

Process Element ¹	#	Method/process	Deliverable	Comment
<i>Derive strategic risks</i>				
(1) & (2)	1	Driver analysis	Key business drivers	Helps establish business context
	2	Establish strategic architecture	Vision, mission, strategic intent, business objectives	Helps establish business context
	3	Scenario planning	Scenarios, key risks	
	4	System dynamics modelling	Causal loops, stock and flows, simulation results	The usefulness of deliverables lies in descending order from causal loop diagrams
<i>Define business problem</i>				
(3)	1	Problem/opportunity analysis	Problem/opportunity identification	
	2	Stakeholder analysis	Stakeholders and their needs	
	3	Project definition	Project mandate, method description, scope in terms of project and problem/opportunity	
<i>Analyse risks</i>				
(5)	1	Identify risks	List of risks	Use of causal loops of risk check-list
	2	Reduce risks	List of primary risks	Use of causal loops or clustering
	3	Estimate risks	Estimation of the nature of the risks	
	4	Establish normalised estimation scorecard	Estimation scorecard	Use benchmarking for best practice inputs
	5	Profile risks	Risks profiled according to four quadrants	(See Figure 79)
	6	Determine alternative management actions	Management action alternatives	Use guidelines provided in the section above. Include life cycle analysis. Use benchmarking for best practice inputs
	7	Establish evaluation scorecard	• Evaluation scorecard	

¹ The process element refers to the process element number in Figure 75.

organisation currently practices business risk management. Its execution is based on the design as described in the previous sub-section (paragraph 4.4.6).

4.4.8 Phase-out

A business solution is either phased out because its goal is being terminated or because it needs to be replaced by an improved solution. A risk management solution can be terminated during any business solution phase process, from design through to solution phase-out. In the phase-out of a business change risk management solution, the following areas need consideration:

- During the risk evaluation process, proper life cycle analysis is done.
- During its implemented life it is monitored and controlled.
- In phase-out, its preceding analysis is taken into account but a causal analysis is done to understand its effect on its environment if it is indeed phased out, or even if it isn't.

4.5 Risk management framework

This section summarises the preceding analysis into an integrated framework for the risk management of business change. The constructs of the preceding tables are integrated into Table 54. The framework is then described by means of the following figures.

Figure 85 illustrates the overview business risk management process. This has been divided into 5 distinct phases, namely:

- Analysis (see Figure 86).
- Design (see Figure 87).
- Implementation (see Figure 88).
- Operation (see Figure 89).
- Phase-out (see Figure 89).

The purpose behind the generic approach is to dovetail with a business intervention process, regardless of the level of change being inflicted. This supports the respondents' view in the market research where the majority felt that this was possible (Figure 50). Structuring the model at the conceptual level will allow for applications at the functional and transactional level regardless of the business application.

Process Element ¹	#	Method/process	Deliverable	Comment
			• Risk exposure	
<i>Design risk portfolio and philosophy</i>				
(7)	1	Optimise risk portfolio	Risk portfolio	Risk portfolio in conjunction with evaluation scorecard
	2	Establish risk philosophy	Risk philosophy	Use the risk helix and the implications of the portfolio
	3	Design operational risk management processes	Operational risk management processes	Use EIU framework as a baseline. Use benchmarking.
	4	Design performance management requirements	Performance management structures	Use balanced scorecard and unwritten rules approaches. Use benchmarking for target setting.
<i>Implement and integrate portfolio and philosophy</i>				
(10) & (12)	1	Implement and integrate risk management portfolio and philosophy	Implemented risk portfolio and philosophy	Business change risk management portfolio is integrated with normal management and operational risk management practice
<i>Phase-out risk management intervention</i>				
(13)	1	Phase-out change risk management intervention	Phased-out intervention	

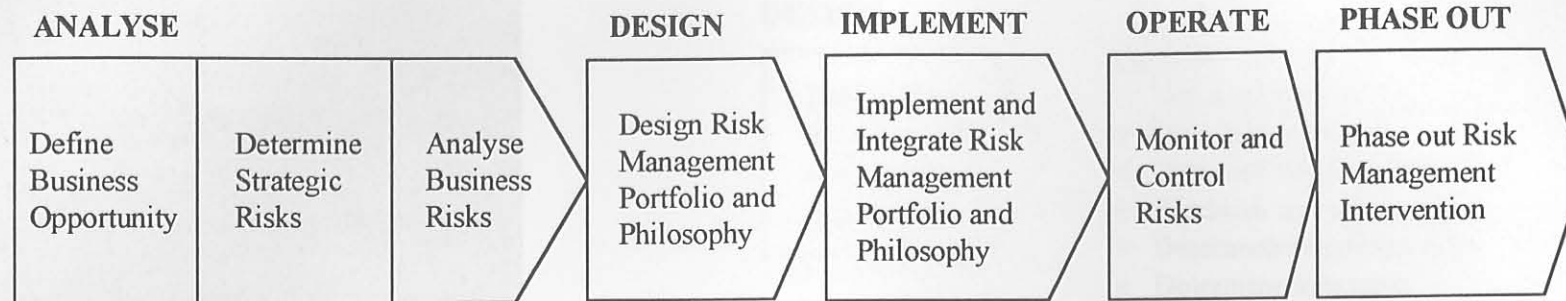


Figure 85 - Overview Business Change Risk Management Process

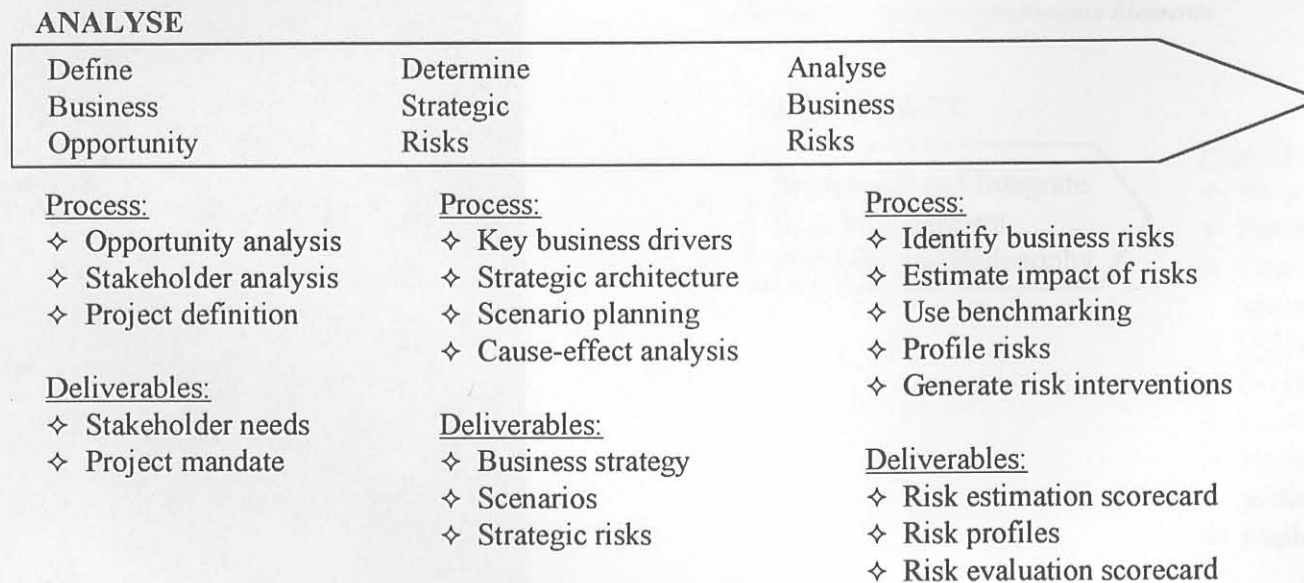


Figure 86 - Risk Analysis Process Elements

DESIGN

Design Risk Management Portfolio and Philosophy

Process:

- ✧ Use benchmarking
- ✧ Select interventions
- ✧ Optimise risk portfolio
- ✧ Establish risk philosophy
- ✧ Determine unwritten rules
- ✧ Determine measures
- ✧ Design operational processes

Deliverables:

- ✧ Optimised evaluation scorecard
- ✧ Optimised risk portfolio
- ✧ Risk management philosophy
- ✧ Business measures
- ✧ Operational process designs

Figure 87 - Risk Design Process Elements

IMPLEMENT

Implement and Integrate Risk Management Portfolio and Philosophy

Process:

- ✧ Integrate with business intervention
- ✧ Establish interactive communication structures
- ✧ Communicate risk objectives, interventions and measures
- ✧ Diffuse philosophy throughout the organisation
- ✧ Establish ringfences
- ✧ Recruit and develop resources
- ✧ Institute accountability, responsibility and authority
- ✧ Implement risk management interventions

Deliverables:

- ✧ Implementation plan
- ✧ Implementation
- ✧ Integration with operational practices

Figure 88 - Risk Implementation Process Elements

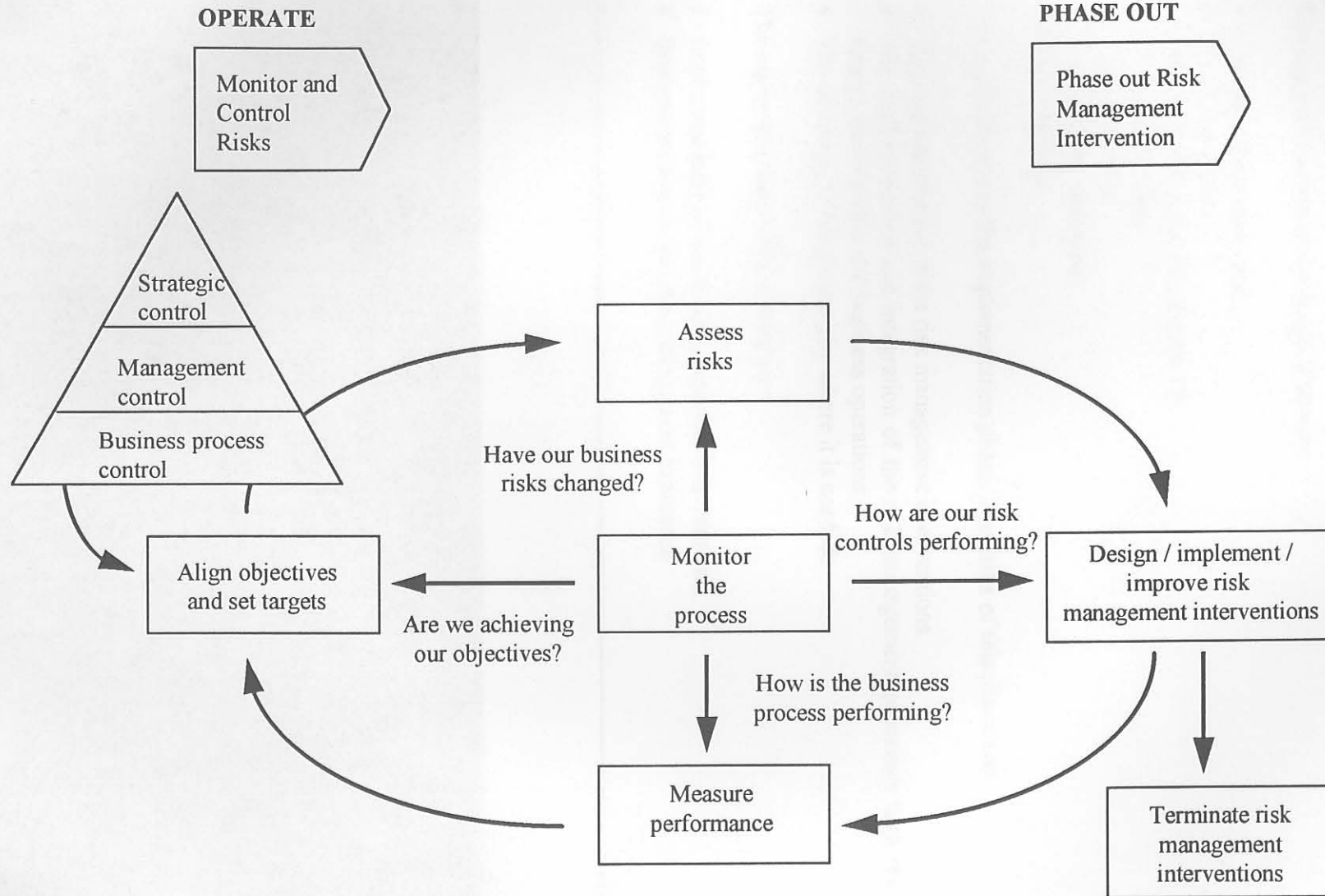


Figure 89 - Risk Operation and Phase-out Process Elements

The analysis phase (Figure 86) provides for the seamless integration with strategy regardless of the level of the business intervention. It does allow flexibility where some business analysis has been done. It crystallises the appropriate information into a form that can be used for risk analysis purposes. Key activities in this phase are the:

- Establishment of strategic risks.
- Identification of business risks.
- Estimation of risks.
- Risk evaluation.

The key instruments are:

- Scenario planning.
- Cause-effect analysis.
- Estimation scorecard.
- Evaluation scorecard.
- Risk portfolio.
- Benchmarking.

The design phase (Figure 87) takes the analysis and constructs into:

- An optimised set of risk management interventions.
- An optimised portfolio.
- A performance management framework.
- An operational risk management process design.

The key instruments of the design phase are:

- The evaluation scorecard.
- The risk portfolio.
- Charette's risk helix (see Figure 19).
- Process modelling.
- Unwritten rules.
- The balanced scorecard.
- Benchmarking.

Figure 88 illustrates the implementation phase. The tasks of this phase are:

- The implementation of the risk management interventions.
- The implementation and integration of the risk management processes with the business change intervention and business operations.
- The diffusion of the philosophy where it is needed.

The major activities of this phase are:

- Implementation of the risk management interventions.
- Implementation of the risk management processes.

- Integration of the risk management interventions and processes with business change interventions.
- Diffusion of the risk management philosophy.

The key instruments of the implementation phase are:

- Project management.
- Change management (see appendix A).
- Performance monitoring and control.

The operation and phase-out phases are illustrated in Figure 89. These two phases, while being the culmination of the efforts of the business change risk management task, lie mainly in the domain of the business operational risk management environment. It is for this reason that the framework is employed (see paragraph (d), p178). For the purposes of the business change environment the business risk management process as illustrated in Figure 89 has been modified.

4.6 Chapter conclusion

This chapter has put forward a theoretical framework that provides a generic means for managing the risk of business change. This framework was synthesised from the analysis of the preceding chapters that include prevailing literature, practitioner experience, market research and relevant tools and techniques. The theory was generated by means of the parameters set from the analysis as well as deductive and inductive processes included in the synthesis approach.

The product of this chapter is untested theory. It is the task of the next chapter to challenge the various aspects of the theory.