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OPERATIONAL RISK MANAGEMENT
IN FINANCIAL INSTITUTIONS

by

Nicolette Schönfeldt

THESIS

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MAGISTER COMMERCII
in
Business Management
in the
Faculty of Economic and Management Sciences
at the
Rand Afrikaans University

Study leader: Professor A. Boesenkool

November 2000
DECLARATION

I, Nicolette Schönfeldt, hereby declare that this thesis is a product of my own labour.

Signed at Roodepoort on 30 November 2000.

_____________________________________
Nicolette Schönfeldt

_____________________________________
Commissioner of Oath
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- Lastly, and most importantly I would like to honour my Saviour for keeping me motivated the past few months. To Him all the praise.

Nikki Schönfeldt
November 2000
SYNOPSIS

TITLE: OPERATIONAL RISK MANAGEMENT IN FINANCIAL INSTITUTIONS

Introduction

Financial institutions and regulatory bodies of the financial services industry have, in the last
decade of the 20th century, woken up to the realisation that the risk management procedures
adopted and promoted by them did not take into account all the risks to which financial
institutions were exposed.

The one risk category, made up by an array of risks, that has been acknowledged by financial
institutions and regulatory bodies for some time, but that has not received much recognition in
the risk management procedures is operational risk.

This is quite ironic, as operational risk is the only "pure" risk, i.e. the only risk with only a
downside potential. Credit, market and underwriting risk, on the other hand, could result in
profits if managed properly. But the losses to which operational risk exposes a financial
institution can be minimised through effective risk management.

Purpose

The greatest obstacle in the process of operational risk management is the fact that there is no
universally accepted definition of operational risk. The main purpose of this study is to perform
an empirical study of the discipline of operational risk management. This includes research on
the subject of operational risk management, assessing the problems experienced in the
operational risk management field, considering the different operational risk strategies that
exist and evaluating qualitative operational risk methodologies as well as the problems
experienced in quantifying operational risk. In conclusion, a definition for operational risk is
suggested, based on the research conducted.
Method of study

A qualitative research approach was adopted in obtaining the information used to draw conclusions. This approach focused on comprehensive research of the literature available on the subject of operational risk and operational risk management, while taking into account the results of recent surveys performed by PricewaterhouseCoopers Inc. Interviews were limited to risk managers within financial institutions as well as discussions held with risk consultants within PricewaterhouseCoopers Inc.

Operational risk

The discipline of operational risk management comprises roughly six dimensions, namely defining operational risk within a financial institution, managing operational risk, assigning responsibilities to manage operational risk, developing a framework for operational risk management, implementing an organisational structure that provides for operational risk management and developing and implementing a strategy for managing operational risk. Each of these six dimensions was researched and discussed in the context of the discipline of operational risk management.

Findings

The majority of the efforts recently undertaken by financial institutions and regulatory bodies on the discipline of operational risk management have focused on developing an acceptable definition of operational risk. This process has been hampered by shortcomings as the definitions developed by them were either too broad ("Operational risk is all the risks, excluding business risk") or too narrow ("Operational risk represents risk related to insurable risks"). The lack of a universally accepted definition of operational risk further hampered their efforts to establish an operational risk management function. It was found that an operational risk framework and an organisational structure that provides for an operational risk management
function (albeit in a global enterprise-wide risk management function) are prerequisites for implementing the operational risk management function successfully.

Despite the progress made within the industry to establish informal standards for the operational risk management discipline, the most important issue still outstanding is how operational risk should be measured quantitatively. Quantitative measurements will have to be developed at some stage as indications of The Basle Committee on Banking Supervision are that they will expect financial institutions to allocate a capital charge to operational risk, as is currently the case with credit and market risk.
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Operational risk management in financial institutions

Chapter 1 - Setting the scene
1.1 Introduction

"On 27 August 1999, Japan's Fuji Bank sent out an email to dozens of fund managers worldwide, detailing its alliance with Dai-Ichi Kangyo bank and the Industrial Bank of Japan. The problem was that this particular email contained a computer virus which made recipients' computers display a message on the 14th day of each month telling the viewer in English that he or she is a 'big stupid jerk.' (Hanley, 1999:26.)

This incident might be humorous to the reader, but the operational risk manager of Fuji Bank is certainly not smiling about it. Some people might argue that the bank surely could not have been expected to foresee the possibility of this event. But the harsh reality is that no excuse is acceptable, because the seemingly innocent action of sending an email to fund managers posed an operational risk, though fortunately not in this case, which could be of such amplitude that the future existence of a financial institution could be jeopardised.

Financial institutions are by their nature exposed to numerous risk factors. Some risks are well known and easily identified, measured and managed. Credit and market risks can be classified as two well-known risks. Financial institutions spend a great deal of money and energy on the identification, quantification and management of these risks, as the occurrence of these risks could have severe implications for their financial results.

But these risks are not the only risks to which financial institutions are exposed. Financial institutions are vulnerable to the implications of operational risks, which impact on their daily operations. Operational risk will be, until operational risk definitions have been explored and developed, be defined as the risk inherent to a financial institutions daily operations, encompassing all areas within a financial institution, which can not be managed so that it result in a profit for the financial institution.

The above-mentioned example of Japan's Fuji Bank is a typical operational risk factor. Not only can the occurrence of operational risks impact on the continuity and validity of operations, but it can also result in financial losses to the institution.
Before the year 2000, banking crises had occurred under all the different regulatory and risk management regimes. This led to an outcry by financial institutions that their current risk management approaches were not sufficient to address the different risks to which they were exposed. This is supported by the results of a recent survey performed by the British Bankers' Association, the International Swaps and Derivatives Association and Robert Morris Associates. These parties, together with PricewaterhouseCoopers Inc. ("PwC"), conducted a comprehensive survey of current operational risk management practices across the global financial services industry (Bhattacharyya, 1999: 8). Questionnaires sponsored by 12 banks were sent out to 90 banks around the world. Areas considered by the survey included: the definition and categorisation of operational risk; management structure; identification, monitoring and assessment tools; measurement and capital; and control, mitigation and risk transfer. The results of the survey, as well as a similar benchmarking survey conducted by PwC, will be discussed at a later stage. It is however important to note that the impact and relevance of operational risks in financial institutions are increasingly emphasised.

1.1.1 Risks within South African financial institutions

A study of the most recent annual reports of leading South African financial institutions show that they consider the following risk categories as the most significant to their operations:

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Table 1.1 Risks recognised by financial institutions (Source: Financial institutions’ annual reports)

It is interesting to note that the financial institutions listed above rate operational risk as one of their key risk areas, whereas the insurance companies, except SANLAM, do not include this in their list. Although the financial institutions are recognising the potential threat of operational risk, it was not until recently that an interest in operational risk management developed. To understand this sudden interest, it is necessary to understand the development in the market and credit risk management functions.

Financial institutions began to address market risk issues comprehensively and systematically in the mid 1990s. Every financial institution that was worth its money had an independent market risk management function dedicated to monitoring the risks stemming from changes within the market value of its trading portfolios. The past couple of years have also seen the financial industry turning its attention to credit risk, i.e. the risks stemming from the probability of counter party default. Sophisticated approaches were developed to manage both market and credit risk. Credit and market risk will be discussed briefly in Chapter 2. Financial institutions soon acknowledged that market and credit risks by no means exhaust the category of risks to which they are exposed. Initially, all these ‘other’ risks were ‘lumped together’ into a category that was called operational risk. It included risks stemming from personnel issues, legal intricacies, systems failures, fraud and trade processing errors, to name but a few. Subsequently, financial institutions are in the process of separating true operational risks from the other risks. Most financial institutions have, however, for many reasons, left these issues behind and preferred to concentrate on the more traceable (and more easily managed) challenges associated with credit and market risk (Bhattacharyya, 1999: 3).
1.1.2 Barings Bank, ABSA Group, etc.

Though the motives behind this approach are understandable, it is quite noticeable that all the major trading disasters in the financial services industry have stemmed from factors relating to operational risk. Apart from Fuji Bank mentioned above, the collapse of Baring Bank can also be mentioned as an example. This collapse may have been triggered and catalysed by adverse market movements in the Far East markets, but the poor management controls that allowed Nick Leeson to operate were a time bomb ready to explode.

"Trader Nick Leeson was supposed to be exploiting low-risk arbitrage opportunities that would leverage price differences in similar equity derivatives on the Singapore Money Exchange and the Osaka exchange. In fact, he was taking much riskier positions by buying and selling different amounts of the contracts on the two exchanges or buying and selling contracts of different types. Thanks to the lax attitude of senior management, Leeson was given control over both the trading and back office functions. As Leeson’s losses mounted, he increased his bets. However, after an earthquake in Japan caused the Nikkei Index to drop sharply, the losses increased rapidly, with Leeson’s positions going more than $1 billion into the red. This was too much for the bank to sustain and in March 1995 the once respected and UK’s oldest merchant bank, was purchased by the Dutch bank ING for just one pound sterling." (eRisks, 2000, www.erisks.com)

On the local front, ABSA Bank Internet bank users were recently routed to a pornography site when they logged onto the ABSA Bank website. This was caused by an external factor that was not under the control of any risk manager, IT manager, business manager or any other manager at ABSA, as it was a result of a problem experienced at the service provider. Nevertheless... it posed an operational risk to ABSA.
These are merely the headline-gripping stories. Operational risk also includes mundane day-to-day losses caused by poor operational controls. Individually, these losses might not amount to much, but taken as a whole they can represent severe inefficiency that impact adversely on customer service and, ultimately, the bottom line profits of the financial institution.

Financial institutions are realising that they can no longer treat operational risk as an afterthought. Tackling operational risk management systematically and effectively has become a priority. But the difficulties in meeting this challenge are significant. It is by no means clear how operational risk should be defined, let alone quantified. And the situation is worsened by the lack of operational risk-related data.

1.2 Problem statement

Traditionally, the concept of risk focused on financial concerns, to such an extent that the management of credit and market risks is now a sophisticated science. By their nature, these risks can be quantified, measured, analysed and managed. They are also well defined and understood (Rossiter, 1999, www.pwcglobal.com).

Operational risk has recently emerged as a separate and increasingly important functional discipline within the financial services industry. But, as opposed to the other more familiar risks within financial institutions, as mentioned above, the definition, management and measurement of operational risk have not yet been clearly defined.

The definition of operational risk is still evolving, and to date, an agreed-upon universal definition has still to be developed. This result in operational risk being defined as what it is not, i.e. any risk that is not related to credit, market or insurance risks.

The root causes of most of the recent losses incurred by huge organisations are operational in nature. The prevalence and magnitude of these incidents give rise to an increased focus on the management of operational risk throughout the financial services industry.
Operational risk is posing a great threat to financial institutions. The threat is increased by the fact that operational risk is not a subject of an exact science. The problem experienced by financial institutions in defining and managing operational risk relate to the difficulty they incur in defining operational risk. This thesis will aim at addressing this problem experienced by financial institutions, but instead of proposing a complete definition for operational risk, the approach will be adopted to address the problem of operational risk management.

1.3 Research objectives

The purpose of this thesis is to evaluate the different definitions of operational risk found in literature and to evaluate the approaches that exist in practice to manage operational risk.

The main objective will be reached by addressing the following sub-objectives:

- To assess the problems experienced in the operational risk management field in general.
- To evaluate qualitative models for managing operational risk.
- To evaluate the problems experienced in quantifying operational risk.
- To consider the different operational risk strategies that exist.

1.4 Research methodology

A qualitative research approach was adopted in obtaining the information used to draw conclusions on.

1.4.1 Literature study

A comprehensive literature study was conducted to identify the theoretical principles underlying the operational risk management discipline. Based on the results from the literature study the different definitions that exist for operational risk was evaluated.
Recent research studies performed by PricewaterhouseCoopers Inc. form the basis for conclusions on the current situation in the real-world practice.

1.4.2 Interviews

Interviews were limited to risk managers in financial institutions and to risk consultants in PricewaterhouseCoopers Inc.

1.5 Limitations of the study

The purpose of this study is to conduct research into the subject of operational risk in South African financial institutions and the management thereof. This study will not provide an in-depth analysis of other risk areas within financial institutions, specifically credit, market and insurance risk. References will however be made to these risk factors, as operational risk cannot be viewed independently from them. Therefore, a brief discussion of the other significant risk categories will be undertaken in Chapter 2 to provide the reader with insight into the nature of these risks and facilitate an understanding of the underlying relationship between these risk categories and operational risk.

1.6 Layout of the study

This study will consist of five chapters.

Chapter 2 starts with a theoretical overview of the subject of risk management in general. It progresses to the historical development of the risk management function and the concept of risk, whereafter risk management, market risk, credit risk, underwriting risk is discussed briefly. Chapter 2 concludes with an introduction to operational risk and the role-players within the operational risk arena.

Chapter 3 explores the subject of operational risk in financial institutions. Operational risk definitions are discussed in this chapter. Consideration is also given to why financial
institutions should management operational risk and who should take responsibility for it. Finally, a framework for operational risk in financial institutions is developed.

Chapter 4 consists of an analysis of different operational risk strategies that financial institutions can adopt in managing operational risk.

Chapter 5 provides a summary of the most significant findings of the study. It also provides a definition for operational risk, based on the research conducted for this study.
Operational risk management in financial institutions

Chapter 2 – Risk management: a theoretical overview
2.1 Introduction

In an effort to understand operational risk management fully, it is necessary to review and evaluate the development of risk management. Doing this will set the scene for a more in-depth discussion of operational risk management as a new and evolving discipline.

2.2 Historical development of risk management

The origins of risk financing can be traced as far back as 1700 BC when the Babylonians established bottomry as a means of handling the risks associated with international trade (Valsamakis, 1996:2). According to The Britannica (2000, www.britannica.com), bottomry was “a maritime contract by which the owner of a ship borrows money for equipping or repairing the vessel and, for a definite time, pledges the ship as security, it being stipulated that if the ship be lost on the specified voyage or period, by any of the perils enumerated, the lender shall lose the money.”

The first risk control measures were introduced as far back as approximately 700 BC by the Greeks and the Phoenicians. They extended the bottomry principle and developed bonds with special provisions that were aimed at reducing the risk to the grantee of the bond (Valsamakis, 1996:2).

The above developments eventually led to the discipline known to the modern world today as risk management. The recognition of risk management as a separate management function can be traced back to Henri Fayol (Jarvis, http://sol.brunel.ac.uk/~jarvis/bola/competence/fayol.html), who in 1916, identified the following six basic functions for which management are responsible:

- **Technical activities** such as production, manufacturing and adaptation
- **Commercial activities** such as buying, selling and exchange
- **Financial activities** such as the search for the optimum use of capital
- **Security activities** such as the protection of property and persons
• Accounting activities such as stocktaking, compiling financial statements, determination of costs and the compilation of statistics
• Managerial activities such as planning, control, organisation, command and co-ordination (Valsamakis, 1996:3).

It is generally accepted that the modern concept of risk management originated in the United States (Valsamakis, 1996:2). This was mainly due to the rate at which technical and other development took place, which exposed companies to an increasing number of risks.

Formal risk management started to develop in South Africa in the 1970s. The first known risk management statement was in 1975, by Mike Rosholt of Barlow Rand. Apart from the establishment of a number of risk organisations, e.g. The Society of Risk Managers, risk management is also taught at various levels in educational institutions in South Africa (Valsamakis, 1996:6).

As a starting point, it would be appropriate firstly to consider what is meant by the term risk management. Dickson (1989: Journal of Society of Fellows as quoted by Valsamakis, 1996:13) defined risk management as “the identification, analysis and economic control of those risks which threaten the assets or earning capacity of an organisation.”

The above definition is directed at a general management function. A more appropriate definition, specifically where operational risk management is concerned, would be the one suggested by Valsamakis (1996:13): “Risk management is a managerial function aimed at protecting the organisation, its people, assets and profits, against the consequences (adverse) of pure risk, more particularly aimed at reducing the severity and variability of losses”.

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2.3 The concept of risk

The Oxford Dictionary defines risk as:

risk | risk | n. 1 Danger; (exposure to) the possibility of loss, injury, or other adverse circumstance. b (Exposure to) the possibility of commercial loss, spec. (a) in the case of insured property or goods, (b) as part of economic enterprise and the source of entrepreneurial profit. 1.17. 2 A chance or possibility of danger, commercial loss, or other risk. 3 A person considered a liability or danger; a person exposed to risk.

The terms "risk" and "uncertainty" are used interchangeably. It is however not surprising that the term risk is interpreted differently by everyone in their unique environment. In our personal capacity, we are at risk when we drive in our cars, board an aeroplane, etc. Similarly, institutions are at risk, either through the environment in which they operate or through the transactions in which they engage. Certain risks to which an institution is exposed are unique to the industry in which it operates and will differ from other institutions.

Some definitions of risk in the financial environment include:

- A combination of hazards measured by probability.
- Uncertainty of loss, where the term risk is implicitly understood as uncertainty of financial loss – and where the definition denies that the degree of uncertainty needs to be measurable or the probability of loss determinable.
- A condition in which loss or losses are possible. Risk (pure) involves only the possibilities of loss or no loss (Valsamakis, 1996, 24).
- The uncertainty surrounding an event and outcome in a specific situation (Valsamakis, 1996:13).

2.4 Understanding risk management

2.4.1 What is risk management?

The management of financial institutions is a science on its own. The total management of a financial institution is manifested in the directors, whom are appointed by the multiple shareholders.
The term "risk" was defined above. The Oxford Dictionary defines management as:

**management** | mandm(ə)nt | n. 1 The action of managing; the manner of managing; the application of skill or care in the manipulation, use, treatment, or control of things or persons, or in the conduct of an enterprise, operation, etc.; the administration of (a group within) an organisation or commercial enterprise.

Risk management can therefore be defined as the process (action) used to control risk, which is conducted at management level.

### 2.4.2 The purpose of risk management

It is implicit in these definitions that management is responsible for controlling the pure risks (read as operational risks) facing the financial institution. If the definition is understood as such, it is rather interesting that the discipline of operational risk management took so long to develop.

### 2.4.3 Benefits of risk management in financial institutions

The function of risk management would only be undertaken if financial institutions were convinced that they would actually benefit from it.

The most significant benefit of risk management for financial institutions is the reduction or prevention of losses that arise from an adverse situation. Other theoretically benefits inherent to risk management include:

- Effective risk management contributes to an improved control environment.
- Risk management leads to the prevention of hazardous situations that could impact on the operations and/or reputation of the institution.
- The existence of a risk management function contributes to increased investor and customer comfort.
- A formal risk management function indirectly protects shareholder value.
- Risk management enables the risk manager to detect new risks and increased risk levels at an early stage.
- Risk management provides improved and formalised support of Corporate Governance.
Acknowledgement of the risk management function leads to a formal structured approach to risk management as opposed to the previous implicit risk management style.

Through effective risk management, a financial institution can create a competitive advantage.

An increased investment by financial institutions specifically in improving their operational risk management processes does however present its own unique benefits.

PricewaterhouseCoopers Inc. ("PwC") conducted a benchmarking survey in 1999 that examines the operational risk practices used by leading financial institutions in Europe and the US. This survey involved interviews with board members of ABN AMRO, Barclays Bank, Chase Manhattan Bank, Deutsche Bank, ING Group (that bought Barings Bank after their operational disaster), JP Morgan and UBS (Bryn and Gittleson, 1999:26).

The participating financial institutions identified that they gained a real benefit from their investments, in the following ways:

- **Reduced losses**
  Identifiable reduction in losses, errors and incidents has resulted in an ability to identify potential problems earlier, faster and better defined escalation channels and enhanced core processes, for example operational risk managers rectifying recurring causes of loss.

- **Improved understanding**
  Awareness and understanding of operational risk have increased through operational risk training initiatives, knowledge management tools, facilitated workshops and communication programmes.

- **Better decision-making**
  Information being produced about operational risk has enabled senior management to understand more clearly where key exposures lie and what the priorities of improvement are.
More importantly is that the survey has indicated that these financial institutions are beginning to create a competitive advantage through their new operational risk practices.

Examples of competitive advantages mentioned by the participants are:

- **Asset management**
  
  In the asset management sector, financial institutions are communicating their operational risk management capabilities as part of their marketing to new customers, and management is of the opinion that this has a noticeable effect on gaining new business.

- **Transaction processing**
  
  Financial institutions are developing "insourcing" business strategies for transaction processing. Initiatives to produce quantitative information on expected losses can impact directly on pricing decisions, the ability to set service level agreements and the identification of leading competencies.

- **Service delivery**
  
  Operational risk management is improving the cost and quality of service delivery in sectors such as custody, asset management and retail financial services, through the use of statistical techniques (Bryn and Gittleson, 1999:27).

### 2.4.4 Risk classification in financial institutions

There are different types of risks to which financial institutions are exposed, depending on the environment in which they are assessed. In Chapter 1 an analysis was undertaken of the annual reports of major South African financial institutions to identify the risks that they classify as significant to their business. The financial institutions had the following risk categories in common:

- **Market risk**
- **Credit risk**
- **Underwriting risk**
- **Operational risk**.
Other risks mentioned by them, but classified differently, were:

- Liquidity risk
- Interest rate risk
- Compliance risk
- Country risk
- Legal risk.

The 'other' risks were historically classified as business and strategic risks. The risk universe was therefore typically categorised as illustrated in figure 2.1.

![Figure 2.1 Categories of risk (Source: Kingsley, Rolland, Tinney and Holmes, 1998:3)](image)

The classification of risks, as illustrated above, attests to the array of different interpretations of risks that existed historically and still do, in practice, in a sense. Business risk, today, is defined as including credit and market risk, where market risk includes liquidity and interest rate risk, and credit risk includes country risk. Strategic risk is considered to include (per the illustration above) credit, market and operational risk, where operational risk includes compliance and legal risk. Strategic risk, in the modern view, also includes underwriting risk.

Market, credit, underwriting and operational risks can be classified into two broad categories. Market, credit and underwriting risks can be categorised as speculative risks. Speculative risks offer a chance of profit or loss for the institution. Operational risk, on the other hand, has only the possibility of either loss or no loss and is referred to as pure risk. Pure risks should, therefore, theoretically speaking, be the primary focus area of operations management. And because the potential results of these two categories differ...
significantly, the way in which they should be managed should also differ (Valsamakis, 1996: 31).

It is appropriate now to discuss the major categories to which financial institutions are exposed.

2.5 Market risk

Market risk can generally be defined as the risk of changes in the present value of a bundle of cash flows resulting from changes in a market-determined price or interest rate (Culp and Neves, 1998:11).

As mentioned earlier, market risks include the following risks:

- **Interest rate risk**
  Financial institutions' earnings and capital positions can be affected by fluctuations in interest rates. Interest rate risk can be defined as the adverse changes in market interest rates.

- **Liquidity risk**
  Liquidity risk refers to potential loss in profits and/or capital resulting from a financial institution's inability to meet its obligations when they become due. It arises from the institution's failure to maintain adequate reserves to service funding requirements.

Market risk can however be extended to include, in addition to those mentioned above, the following risks (Haight, 1997:11):

- **Price risk**
  Price risk refers to the loss in value that occurs when a security is sold at a price below its purchase price. The trading desks of financial institutions are typically exposed to this risk.

- **Foreign exchange risk**
  Foreign exchange risk is a result of unexpected currency fluctuations that impact on the value of the foreign exchange exposure of a financial institution. This risk arises when a financial institution transacts in more than one currency. Typically, foreign exchange risk can occur when settlement of a transaction is in a foreign currency.
transaction exposure) or as a consequence of having assets or investments in foreign currency (translation exposure).

2.6 Credit risk

Credit risk refers to the risk of actual or possible non-performance by an obligor to the financial institution on a specific transaction between the financial institution and the obligor (Culp and Neves, 1998:11).

Credit risk therefore involves the ability of the borrower to make timely interest rate and principal repayments. Credit risk arises from a borrower's inability to perform in accordance with the terms of a contract, thus eroding the financial institution's earnings or capital. Credit risk is a natural consequence of financial institutions' lending activities.

Other specific risks that can be included in the credit risk category are:

- **Delivery risk**
  
The risk that the financial institution or the obligor will not be able to deliver the security for a specific transaction or that the security against which the borrowing was made will not realise the value of the loan (BOE, 1999:58).

- **Country risk**
  
  Country risk is the risk of loss arising from conditions in a foreign country that adversely affect the ability of counterparties from that country to meet their obligations (SBIC, 1999:48).

2.7 Underwriting risk

Underwriting risk refers to events that result in unpredicted or unexpected losses, and it normally relates to short-term and life assurance activities (ABSA, 2000:47).
2.8 Operational risk

The sudden interest in operational risk may raise the question under risk managers as to whether this is only a hype aimed at drumming up business in a hard market, especially if we take into account that most of the talk seems to be coming from brokers and consultants who stand to gain from the risk management needs generated by the emerging new risks and new ways of thinking about risk (Katz, 2000:15).

2.8.1 How operational risk is currently viewed in practice

Although the financial services industry only recently started focusing implicitly on operational risk, PricewaterhouseCoopers Inc. ("PwC") has conducted a number of surveys on operational risk practices within the industry.

The first survey was conducted in 1997. PwC conducted the survey in the UK in conjunction with the British Bankers' Association ("BBA"). PwC also conducted a similar survey in Australia in the financial services industry in 1998. Although these surveys were conducted in the UK and Australia, the results provided the trends that were developing in the industry relating to operational risk management (Rossiter, 1999, www.pwcglobal.com).

The surveys revealed that around 25 per cent of the respondents had experienced individual losses of more than $1 million between 1995 and 1998. High levels of loss were reported in the categories of system failures, criminal acts, legal action, erroneous funds transfer, business interruption costs and damage to.

A significant finding of the surveys was that an average of 73 per cent of the respondents thought that operational risk was equally or even more important than either market or credit risk. This is contrary to how management saw the situation not so long ago. But the prevalence of high-profile losses in the media is raising awareness of the critical importance of operational risk issues.

As mentioned before, no measurement standard exists for quantifying operational risk factors. The survey findings showed that an average of 30 per cent of the respondents
do not evaluate the impact of operational risk. Of those that do, 44 per cent used risk-ranking techniques. A few used sophisticated probability risk models, and the remainder used a number of undefined methods.

Another major survey finding was that 47 per cent of the UK respondents and 30 per cent of the Australian respondents did not report on operational risk other than through their internal audit function.

These survey findings emphasise the fact that it is difficult to report on an ill-defined risk area, for which there is no standard measurement procedure. The results suggest furthermore that organisations should recognise the importance of operational risk and pay specifically more attention to:

- Formal policies, definitions and approaches
- Education and awareness of the board of directors on an enterprise-wide basis
- Rigorous measurement and risk modelling techniques for operational risk
- Reporting on operational risk.

A second survey was conducted in 1998. This survey was a more in-depth study in the discipline of operational risk management within the financial services industry. PwC worked with ABN AMRO, Barclays Bank, Chase Manhattan, Deutsche Bank, JP Morgan and UBS to benchmark capabilities and identify leading practices (PwC, 1999, www.pwcglobal.com).

The key findings of this survey were:

- A significant board-level commitment existed towards the discipline of operational risk management.
  
  The majority of financial institutions have allocated the responsibility for operational risk to a specific board member. Board members are generally active in sponsoring operational risk initiatives and chairing operational risk committees.

  The responsibilities of the board members regarding operational risk will be discussed under the recommended organisation structure in Chapter 3.
• Fraud is seen as the most significant current type of operational risk losses. It was clear from the results of the survey that participants view fraud as their most significant operational risk.

Apart from the impact of fraud, there is also widespread recognition that the cost of resolving errors resulting from operational risk can also be a major element in the operational risk losses.

• Financial institutions are already enjoying benefits from operational risk management and foresee increased benefits in the future. The benefits were discussed earlier under “Understanding risk management” (refer to point 2.4).

The third, and most comprehensive, survey was conducted in 1998 and 1999. The survey took over a year to complete and was aimed at gaining an understanding of who and what was driving operational risk management, current practices and likely developments in the next few years. The study was organised by the British Bankers’ Association (BBA), the International Swaps and Derivatives Association (ISDA) and Robert Morris Associates (RMA), and conducted by PwC (PwC, 2000. www.pwcglobal.com).

The key conclusions of this survey are:
• Financial institutions are convinced that operational risk management programmes protect and enhance shareholder value.
• The creation of operational risk management programmes has been driven by a combination of management commitment, the need for an understanding of enterprise-wide risks, a perceived increase in exposure to operational risk and risk events, and regulatory interest.
• To lead this operational risk management initiative, a new organisation model is emerging, with a new position – a Head of Operational Risk, reporting to the Chief Risk Officer. This role is to develop and implement the operational risk framework and consult to the lines of business.
There is greater consensus on the core definition of operational risk: The risk of direct or indirect losses resulting from inadequate or failed internal processes, people, and systems or from external events.

- Methodologies are evolving to quantify Operational Risk Capital. While progress is being made, there is no consensus on approach, and methodologies are not yet used as a basis for decision-making.
- A framework for operational risk management is emerging, consisting of a set of integrated processes, tools and mitigation strategies.
- Although each firm may have evolved in its own manner, five stages of development of an operational risk management framework can be identified.

The results of this third survey are quite significant for the development of the operational risk management discipline and will be discussed in more detail in Chapter 3.

2.8.2 Why manage operational risk?

Operational risk is every director of a financial institution's greatest fear. Huge financial losses and a damaged reputation could put an end to the most respected manager's career.

The frustration experienced by risk manager when attempting to manage operational risk is evident when considering the difficulty of defining, analysing and solving a potential problem before it has arisen. Their job is hindered with the challenge involved in persuading the board of directors to devote millions of rands to protect the financial institution against these ill-defined events.

Defining operational risk more accurately is proving to be tricky. It is simple enough to list some key risk resources. But it is difficult to do this exhaustively, even for a single business line. More than anything, it is difficult to list risks in a way that helps managers to see how they connect to other risks, to weight them in importance, or to tie them to business lines - and to manage them (Anon, 1999, www.financewise.com).
Lisa Cooper of Financewise (Cooper, 1999, www.financewise.com) interviewed a panel of senior bank executives on operational risk. Her question "What is the most threatening aspect of operational risk to your institution and why?" resulted in the following responses:

- Michael Ong, Senior Vice-President ABN AMRO Bank (Chicago): All aspects are potentially threatening, but one, people risk, could seriously damage the financial institution so that it would need a massive bailout to recover. Financial scandals are all attributable to the breakdown and lack of internal control, sound judgement and discipline of the people responsible for these businesses.
- John Wilmot, Managing Director Corporate Treasury Chase Manhattan Bank (New York): Technology risks can have significant ramifications on the ability of the bank to operate effectively.
- Bob Mark, Head of Risk Management, CIBC (Toronto): Two operational risks are most threatening: people and managing changes.
- Douglas Hoffman, CEO of Operational Risk Bankers Trust (New York): The most challenging aspect is human behavioural risk: errors, omissions, misdeeds, wrongful acts, and failures of control. These are challenging on a daily basis, but even more so in times of transition.

It is clear from these examples that operational risk and the management thereof is not a new phenomenon. Financial institutions have been doing this for years. Systems, technology, processes, fraud, theft, human error, negligence, etc have existed ever since the first business officially started. What is new though, is that operational risk management is recognised as a new discipline. Most financial institutions recognise that the management of operational risk is on a par with the other major risks mentioned earlier, namely credit, market and underwriting risk. Senior management became aware of the fact that not formally managing operational risk could have disastrous implications for any financial institution, irrespective of its size. Barings Bank can be mentioned as a good example of the magnitude of the problems that operational risk could pose for a financial institution.
It is evident from the research results documented on operational risk, that the debate on how to define operational risk is sometimes overshadowed by a debate on how to manage operational risk.

In address the question on how operational risk management should be managed, management should explore:

- Common causes for operational risk to materialise;
- The value-adding aspect of operational risk management to the financial institution; and
- Enterprise-wide risk management.

2.8.3 Common causes for operational risk to materialise

The following common causes were noted as resulting in operational risk to materialise.

- Lack of ownership of risk by management.

The inability of executive management to accept responsibility for formally managing operational risk is still a problem. The inability of middle management to accept responsibility for the effective implementation of policies and processes, and to ensure an effective control environment creates an environment where operational risk could manifest itself.

- Inadequate reporting / information systems.

The lack of efficient reporting systems will prevent financial institutions from highlighting operational problems where they exist. This increases the risk that operational risk may be materialising without the management team realising it. The financial industry is still trying to define operational risk and, therefore, develop information systems to report effectively on actual risk levels in their infancy.

- Absence of tools or methodologies

The struggle to define operational risk and operational risk management further implies that there are no standardised tools and methodologies to manage or measure operational risk. It is accepted by most financial institutions that there is room for both a qualitative and a quantitative methodology. This issue will be expanded upon in Chapter 4.
• Need for greater training
The lack of awareness of the probability and seriousness of operational risk considerably increases the risk of it materialising. Staff at all levels should be made aware of the existence of operational risk and what is required to address the risk levels effectively. Training programmes will therefore have to be upgraded to include operational risk management as well.

• Need for improved controls
Good corporate governance requires a well-managed control environment. A well-established and well-maintained control environment effectively lowers operational risk levels.

• A changing business environment
The rapidly changing business environment creates a situation where products have to reach the marketplace faster. This situation increases the risk that products are launched without the backing of proper systems, procedures and trained staff. This is an ideal breeding ground for operational risk to materialise.

• Globalisation
For South African companies, globalisation is a real threat to operational risk. Operations are opened to new countries where habits, cultures and legislation are virtually an unknown. Not being au fait with these issues raises operational risk levels dramatically.

• Infrastructure and technology
Continuous and fast developments in the field of technology are breathtaking, but the increased complexity brings with it additional operational risks and this while most of the world is still trying to understand the operational risks involved in the Internet.

• Outsourcing
A problem with the outsourcing of activities is that companies view this as an opportunity to transfer risk. What they do not realise is that functions and processes are outsourced, but operational risk is not. Believing that outsourcing reduces risk is almost equal to abdication.

• Regulatory and statutory changes
Not adhering to regulatory and statutory changes brings about more exposure to operational risk. The requirements regarding compliance and the functions and
responsibilities of the Compliance Officer are the latest example of operational risk being brought about by statutory changes. It is more of a statutory effort to manage legal risk as part of operational risk.

It is clear from the array of incidents of an operational nature experienced by financial institutions that there is a great need for operational risk to be managed.

2.8.4 Operational risk management adding value

Another reason why operational risk should be managed is the general acceptance that the effective management of operational risk adds value to the financial institution.

Specific benefits that were identified by financial institutions that arose from an increased effort to effectively manage operational risk were listed in 2.4.3.

2.8.5 Enterprise-wide risk management

The importance of enterprise-wide risk management was highlighted by the near-collapse of the hedge fund Long-Term Capital Management ("LTCM") in September 1999. John Meriwether founded Long-Term Capital Partners in 1993. It seems LTCM relied too much on theoretical market-risk models and not enough on stress-testing, gap risk and liquidity risk. There was an assumption that the portfolio was sufficiently diversified across world markets to produce low correlation. But in most markets, LTCM was replicating basically the same credit spread trade. In August and September 1998, credit spreads widened in practically every market at the same time (Shirreff, 1999, http://newrisk.ifci.ch/DownloadABLEDocs/LTCMShirreff.doc).

Subsequently, the financial industry's Counterparty Risk Management Policy Group report, released in 1999, recommended that large position exposures should be disclosed to primary regulators on a group-wide basis (Cooper, 1999, www.riskpublications.com).

To create revenues, financial institutions create market, credit and operational risk. Enterprise-wide risk management is a key management tool to address the different risk categories on an enterprise level (that is globally), and provides the link between the
strategic long-term decisions and the operational day-to-day decisions (OSI, 2000, www.osl.co.uk). Full enterprise-wide risk management entails bringing the fabric of financial and operational risk management to the running of the entire institution. In this, there may be a strong human element. The understanding of risk management can be widened so that all employees take into account risk management or mitigation in their day-to-day operations, to improve the overall health of the organisation.

Most bankers today are confident about their ability to handle credit risk, but as the industry moves towards risk management on an enterprise-wide basis, the level of confidence drops. This was the message from Allen Sanborn, president and CEO of The Risk Management Association ("RMA"), the international association of lending, credit and risk management professionals, at RMA's 4th annual risk management conference in Washington DC (RMA , 2000, www.riskworld.com). "Over the last decade the financial services industry has made great advances in developing effective risk management practices so that institutions today have considerable options, and portfolio management tools, to more effectively measure and price credit risk," said Sanborn. "However, the next challenge will be capital management, assigning capital on an enterprise-wide, risk-adjusted basis to the different risk categories, including operational risk".

Sanborn observed that regulators are also moving in that direction, referring to the Basle Committee's proposal for a new capital adequacy framework to replace the existing Risk-Based Capital Accord issued in 1988 (The Basle Committee, 1998, www.bis.org).

2.9 Role-players in the operational risk arena

2.9.1 The Basle Committee
Since its creation in January 1930, the Bank for International Settlements ("BIS") has been a global banking institution, which is unique at international level. The BIS is an important forum for international monetary and financial co-operation between central bankers and, increasingly, other regulators and supervisors (The Basle Committee, 1998, www.bis.org).
In December 1974, BIS's governors set up what is known today as the Basle Committee on Banking Supervision ("The Committee") to improve collaboration between bank supervisors. The Committee is a forum for discussion on the handling of specific supervisory problems. The Committee also seeks to enhance standards of supervision, notably in relation to solvency, so as to help strengthen the soundness and stability of international banking (The Basle Committee, 1998, www.bis.org).

The Committee’s 1988 Capital Accord sets out the agreement among the central banks, which forms the BIS’s governors, to apply common minimum capital standards to their banking industries. These standards were almost entirely addressed to credit risk, originally considered to be the main risk incurred by financial institutions (The Basle Committee, 1998, www.bis.org). After 1988, a number of amendments to this Accord have been issued. Lately, The Committee proposed revisions on the 1988 Capital Accord in its June 1999 consultative paper. Although changes to the capital adequacy requirements for credit and market risk were given the lion’s share of attention, operational risk managers should be aware that buried deep in the thick document was a new proposal that significantly expands the scope of the capital adequacy framework. The proposal requires financial institutions to set aside capital for potential losses arising from operational risk. The Basle Committee is of the opinion that because operational risk has become too important to ignore, financial institutions must take a disciplined and proactive approach to manage it. Though their final guidelines have not yet been issued, it is possible that financial institutions will be required to apply an explicit capital charge to cover losses arising from operational risks (Bloom and Galloway, 1999:6).

2.9.2 The South African Reserve Bank ("SARB")

The SARB's Supervision Department ("the Department") is placing increased emphasis on the operational risk management procedures implemented by South African financial institutions.

The Department defines operational risk as the potential losses resulting from inadequate systems, management failure, faulty controls, fraud or human error. The definition also includes execution risk, which encompasses situations in which trades
Developments on the operational risk front in the Department are that they initiated a process in 1999 to evaluate financial institutions' operational risk procedures and controls. The objective of the evaluation process was to:

- Ensure that effective operational risk management procedures were in place within trading financial institutions so that depositors' money would not be placed at undue risk and so that trading financial institutions would not pose a systemic risk to the banking system
- Ensure that the board of directors and senior management of a financial institution were suitably informed and undertook appropriate monitoring of operational risk procedures in the particular financial institution
- Raise the level of awareness of operational risk within financial institutions in South Africa

It can be expected that, based on the guidelines to be issued by the Committee and the results of the survey performed by the SARB, the SARB will also update its requirements for reporting by financial institutions in South Africa to include information on operational risk. Financial institutions can be sure that the requirements will not be limited only to information on operational risk. It is more than likely that it will include requirements on the managing and measuring of, and providing for, a capital charge on operational risk.

2.10 Conclusion

Financial institutions have for a number of years paid a lot of attention to the disciplines of market and credit risk, and to a lesser extent, to underwriting risk. Management of financial institutions perceived operational risk the risk that remains once the more prominent financial risks (market, credit and underwriting) have been addressed. The popular definition of operational risk, namely that operational risk is all the risks that are not market, credit or underwriting risks, suggested that management is of the opinion...
that operational risk can not be specifically defined and therefore it can not be specifically management.

It is precisely in this perception of management that the risk of operational risk lie. Management will never be able to manage operational risk effectively until it defined operational risk to its specific scenario.

It is evident from all the exposure that operational risk enjoys in financial literature, that operational risk management is a new evolving discipline. It is also clear from the surveys referred to above that rapid progress has been made in the last three to four years in addressing the concerns of financial institutions. It can be expected that, in view of probable regulatory involvement and a greater awareness throughout the financial services industry of the potential impact of operational risks, the pace of change in operational risk management will increase in future.

It can also be concluded that the discipline of operational risk management urgently requires standardisation. It is therefore expected that an international body, such as the Basle Committee, will soon be taking responsibility for setting specific operational risk standards and issuing a universal operational risk definition.

In the current changes in the workplace and technology, in the probability of new regulation and the uniqueness of the new risks lies uncertainty that represents the reality beneath the hype surrounding operational risk management. This is enough to disrupt the sleep of many a risk manager.

Chapter 3 will continue to explore the concept of operational risk, by focusing on the definitions available on operational risk as well as the management of operational risk.
Operational risk management in financial institutions

Chapter 3 – Operational risk
3.1 Introduction

Risk managers in financial institutions are confronted with a real challenge to manage operational risk effectively so as to limit the potential losses to which they are exposed. The challenge lies in that the concept of operational risk and everything that it relates to has not yet been standardised, resulting in every operational risk manager applying his own interpretation to operational risk issues. This chapter focuses on the discipline of operational risk management, and investigates the key components of operational risk, reasons why operational risk should be managed and who should be responsible for managing it.

The recognition and treatment of operational risk by the different financial institutions in South Africa, as disclosed in their respective annual reports, differ in scope, importance and the extent of recognition it receives. References to the South African practice will be made to ABSA Group Limited, as from the published information it is clear that ABSA has made significant progress in recognising and responding to the existence of operational risk.

3.2 What is operational risk management?

To understand what operational risk management is all about, it is necessary to distinguish between business risk management and operational risk management in an institution.

It is evident from an analysis of the risk that financial institutions deem to be significant to their operations (as noted in Table 1.1) that credit, market, underwriting (where they have significant insurance activities) and operational risk are regarded by all the financial institutions as critical. Other risks identified by the financial institutions can actually be included in one of these four categories. All the risks, except operational risk, can be classified as business risk. Business risk has the characteristic that it has the potential to make a profit. Risk/reward management is therefore very important in the management of these risks. It could also be said that in managing these risks, the quality of business decision-making is measured.
It should be noted that there are operational issues associated with business risks, which, due to the fact that it has no upside potential, should be classified as operational risk. An example is the process of putting in place the security required for a loan. The decision to allow the loan with all the factors taken into account for that decision forms part of business risk. The process of getting the security in place is operational risk. Credit, market and underwriting risk therefore have elements of both business risk and operational risk.

If business risk has the potential to make a profit, and operational risk differs from business risk, it can be concluded that operational risk has no potential to make a profit. This view is supported by ABSA’s (1999:40) description of operational risk: “Operational risk is defined as risks of a non-speculative nature without any potential of profit”. The insurance industry also refers to operational risk as “pure risk”.

Operational risk can therefore be defined as having the following characteristics:
- it is operational in nature; and
- it has only a downside potential.

Because of these characteristics, operational risk would increase cost if not managed effectively. It must be noted though that cost levels may be optimised through effective operational risk management processes.

In any financial institution, operational risk will also be found on its own, for example those operational activities conducive to fraud, fire, theft, people management, technology, systems, etc. These issues have no potential of making a profit and therefore have no direct relation to business risk. The risk exists in making increased losses if these risks are not managed effectively.

Apart from existing on its own, operational risk also exists due to the existence of business risk, as mentioned previously. The relationship between business risks and operational risk, as described in the previous paragraphs, is illustrated in figure 3.1.
3.3 Defining operational risk management

Over the years, with increased interest in recent years, various attempts have been made internationally to define operational risk, but these definitions were either very broad or very narrow. A number of descriptions derived from various sources are listed below:

- Operational risk is all the risks excluding business risk.
- Operational risk represents risk related to insurable risks, e.g. fraud, theft, fire, damage to property, etc.
- Operational risks are all those risks relating to breakdowns in technology, systems and procedures, and human error.

At present, there is still no universally-accepted definition of operational risk. Some financial institutions have defined operational risk as any risk not categorised as market or credit risk. Others have defined it as the risk of loss arising from various types of human or technical error. But all financial institutions see some kind of link between credit, market and operational risk. In particular, there is consensus that an operational
problem experienced with a business transaction (for example, settlement fail) could create market or credit risk (The Basle Committee, 1998:3).

PricewaterhouseCoopers Inc. ("PwC") conducted a survey (PwC, 1999, www.pwcglobal.com) on the current operational risk practices in the financial services industry. They found that most financial institutions included in the survey had their own definition of operational risk, with which the financial institutions were satisfied. Although these definitions vary quite significantly, PwC was able to identify a number of core elements, which could be included in a definition of operational risk. Their recommendation for a definition is: "Operational risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people, and systems or from internal sources".

But operational risk is more than people risk and technology risk. It encompasses all the hidden dangers that do not come under the umbrella of market, credit or underwriting risk. This negativity underlines why operational risk is so difficult to define. And if it is difficult to define, it is even more difficult to quantify, insure against or regulate. Nevertheless, it is evident from the disclosure made by financial institutions on their operational risk management practices, that they have made progress in their attempts to manage operational risk.

Lisa Cooper, in her interview with senior executives of major financial institutions in the United States of America, as well as international financial institutions, received the following answers to the question: "The standard definition of operational risk is everything but market or credit risk. What is wrong with this definition?" (Cooper, 1999, www.financewise.com.)

- Michael Ong, Senior Vice-President ABN AMRO Bank (Chicago): It does not highlight why operational risk harms an institution or how to prevent it.
- John Wilmot, Managing Director Corporate Treasury Chase Manhattan Bank (New York): Nothing is wrong, per se, with this definition.
- Bob Mark, Head of Risk Management, CIBC (Toronto): It says what operational risk isn’t, not what it is.
Douglas Hoffman, CEO of Operational Risk Bankers Trust (New York): It is too broad – it might capture not only operational risk but business, strategy and liquidity risks as well.

These few examples indicate the array of opinions that exists within the financial services industry on defining operational risk.

The wide-angle approach adopted by many financial institutions in defining operational risk (i.e. that operational risk is everything but market, credit and underwriting risk) can make the operational risk manager sound like a counter of all risks and a master of none. This raises the question whether operational risk or operational risk management should be defined, as the problem does not only exist in terms of operational risk definition, but also with regard to issues relating to how operational risk should be managed.

In its 1999 Annual report, ABSA (1999:4Q) endeavours to define operational risk management as:

"Through Operational Risk Management, ABSA endeavours to
- preserve life,
- protect physical assets,
- ensure business continuity,
- prevent undue increase in losses,
whilst minimising the cost of controlling operational risk".

When the literature on operational risk management is reviewed, the conclusion can be drawn that it might ultimately be better to define effectively what operational risk management is rather than defining operational risk. The reason is that if a financial institution is able to define operational risk management effectively and clearly, it will know how to define operational risk.

3.3.1 Best practice operational risk management

At its core, operational risk management has the same basic principles that underlie all the other risk categories. It is therefore appropriate to discuss operational risk
management against the components identified in the literature as best practice for risk management practices.

According to Kingsley, Rolland, Tinney and Holmes (1998:1) best practice operational risk management has three components:

- A workable system for identifying, capturing and measuring risk
- A system for evaluating whether to accept, reject or take steps to reduce risks
- A system for ongoing validation of the control environment.

In their strive to developing a risk management function sufficient for their individual needs, a financial institution should implement the necessary elements to make the above-mentioned components workable and practicable. As a minimum, they should consider implementing the following elements:

- An agreed conceptual framework that provides:
  - A definition of operational risk
  - Identification of the key components of operational risk
  - The role and responsibilities of the function
  - Its operational fit within risk management and the firm as a whole
- A system and data architecture that provides timely, comprehensive and consistent information for decision-making and risk evaluation
- The resources, i.e. management and people
- The necessary tools to measure operational risk.

3.3.2 System and data architecture

The development of the operational risk management function is also burdened with an absence of risk data. Collecting data to be fed into risk management models is a necessary prerequisite for generating risk measures from the operational risk management models.

Systems need to be configured so that for each identified operational risk:

- The potential loss on current and proposed business is valued
- The attributes determining the likelihood of the loss are identified
- The attributes determining the likelihood of controls failing to prevent loss are identified
The actual historical experience of such a loss is identified (Kingsley, Rolland, Tinney and Holmes, 1998:11).

Market risk data is the most readily available, so it is no surprise that many standard measures and models have been created for market risk management. Credit risk data is less available, which has led to delays in the adoption of credit risk measurement, which is commonly accepted by financial institutions and regulators. The situation with operational risk is even more challenging. Not only has there never been an attempt by financial institutions to gather operational risk data, but due to the nature of operational risks, this is not a very simple exercise.

It can be assumed that, firstly, any one financial institution has (fortunately) not suffered all the types of operational losses and certainly not with a sufficient frequency to be used in risk modelling. Secondly, traditional systems do not support the collection of operational risk data.

3.4 Key components of operational risk

As mentioned in this study, as well as mentioned exhaustively in the literature on operational risk, one of the most basic problems experienced with operational risk is the lack of a industry-wide standard definition for operational risk. The process of developing a standard definition for operational risk is hampered by the fact that operational risk, as market and credit risk, is not an exact science. The scenarios giving rise to credit and market risk can be limited to a number of general incidents. Operational risk, on the other hand, exists through a number of widespread, unrelated incidents, processes and activities.

Articles and discussion papers on operational risk are littered with examples where events were not controlled properly by the financial institution's normal risk management procedures and resulted in financial loss to the financial institution.

If the real life examples where controls failed to prevent situations that arose into losses (specifically due to operational risk) are taken into consideration, a number of broad areas where operational risk exists within financial institutions, can be identified.
Kingsley, Rolland, Tinney and Holmes (1998:4) identified the following areas as a result of their studies. Although operational risk is not limited to these key components, they are considered to be sufficient for the purposes of this study.

The key components of operational risk are:

- core operational procedures;
- people;
- client relationships;
- transactional systems;
- reconciliation and accounting;
- change and new activities; and
- expense volatility.

3.4.1 Core operational procedures

Risks that affect the core operational capabilities of a financial institution include the risk of premises, staff or systems becoming unavailable, for example, due to damage resulting from fire, bombs, technical or natural disasters, loss of utilities such as power, water or transportation, employee disputes such as strikes or loss of key operational staff and inadequacy or loss of systems due to computer viruses (Kingsley, Rolland, Tinney and Holmes, 1998:4).

These risks may seem obvious, but they can have unforeseen implications that impact negatively on a financial institution’s operations. Certain of these risks exist to a greater extent in the South African context, as opposed to the rest of the developed countries, mainly due to our more unsophisticated environment.

3.4.2 People

People are arguably a financial institution’s most important resource, irrespective of the level of technology development. However, historically this has been overlooked when evaluating operational risk, as it is very difficult to measure and model the risk related to the people resource. This is illustrated by the difficulty of measuring human error and negligence, the lack of integrity and dishonesty, the lack of segregation of duties and professionalism, the lack of teamwork and respect for individuals, reliance on key
individuals, insufficient skills, training and supervision, and the lack of a culture of control (Kingsley, Rolland, Tinney and Holmes, 1998:4).

When analysing the failures, errors and disasters experienced by financial institutions, it is evident that the people risk continues to be the major contributing factor. Therefore, a means should be developed to incorporate this risk in the operational risk assessment in an institution.

3.4.3 Client relationships
A financial institution derives its value largely from its reputation and its ability to place financial products within its client base. Key risks that lie in their client relationships can therefore be identified as association and competitiveness (Kingsley, Rolland, Tinney and Holmes, 1998:4).

- Association
  Financial institutions that are linked to clients involved in unfavourable publication of, for example, money-laundering scams suffer severe financial cost and damages to their reputation (Steel, 1999, www.laundryman.u-net.com).

- Competitiveness
  Many customers and fund managers, specifically in the international market, allocate their business on performance criteria that include an assessment of the financial institution's operational risk management capability.

It was also mentioned earlier that the banks that participated in the PwC survey experienced an increased competitive advantage in their investment in operational risk practices.

3.4.4 Transactional systems
Historically, the assessment of the operational risk inherent in participating and executing any transaction has focused on settlement risk. This view has been expanded to include the risks relating to:

- Data capture and processing
  Financial institutions rely on prompt, accurate and efficient data capture and processing.
• Confirmation and contractual documentation
  Many senior management members were merely lucky not to have experienced the possible costs that could arise from unsigned or disputed documentation aggregated either by trade or by counterparty.

• Settlement operational risk
  Although there has been a significant improvement in the ways that voluminous data are translated into meaningful management information and to control transactions in progress in a proactive manner, the risk associated with the settlement function will never disappear (Kingsley, Rolland, Tinney and Holmes, 1998:5).

3.4.5 Reconciliation and accounting
The transactions processed by major financial institutions run into billions of rands. Therefore, trades that fall outside the normal parameters and are processed for whatever reason can be significant. The reconciliation of settlement transaction data with funding and accounting results is therefore a key process in protecting a financial institution against undisclosed positions or undisclosed losses (Kingsley, Rolland, Tinney and Holmes, 1998:5).

3.4.6 Change and new activities
The financial industry has been marked by a high number of mergers and acquisitions. In 1992 and 1993, South Africa saw the largest merger of this nature on local ground when Volkskas Bank, United Bank, Trustbank and Allied Bank merged to form the ABSA Group. Subsequently, more mergers followed, including Rand Merchant Bank merging with First National Bank to form the FirstRand Group.

Whenever any institution is in the process of change or developing new activities, it runs much higher operational risks. This is mainly due to consolidating different systems, cultures and work practices.

3.4.7 Expense volatility
Income volatility analysis has historically focused on the components of revenue volatility and margins, typically ignoring the operational risk involved in underestimating the potential exposure to volatility in the cost base.
Key risks relating to underestimating the volatility in the cost base include:

- **Expenditure on technology**
  
  Financial institutions are heavily dependent on technology. Because of this and the cost of technology, financial institutions run the risk of investing either too much or too little in technology to remain competitive.

- **Bonuses and variable compensation**
  
  Many institutions, specifically in the trading function, find that a significant proportion of so-called "variable compensation" (or commission) is required to retain key staff and to remain in business. This needs to be included and controlled as such (Kingsley, Rolland, Tinney and Holmes, 1998:4).

### 3.5 Conclusion

Because the potential incidents giving rise to operational risk are so broad in magnitude, operational risk has become a factor that financial institutions can no longer afford to ignore. Operational risk should therefore receive recognition at board level, by having a board member take specific responsibility for overseeing the operational risk function in that institution.

Operational risk cannot easily be summarised as a one-line definition. Financial institutions should therefore consider addressing their operational risk needs, not by attempting a static operational risk definition, but by developing sufficient operational risk management strategies.

Managing operational risk is becoming an important feature of sound risk management practice in modern financial institutions. The most important types of operational risk involve breakdowns in controls over core operational procedures, people, client relationships, transactional systems and reconciliations. Operational risk also stems from changes within a financial institution, new activities undertaken by financial institutions and underestimating the risk involved in a volatile cost base. Not addressing operational risk factors sufficiently can result in financial institutions experiencing financial losses through error, fraud or failure to react in a timely manner. It can further cause the interests of the financial institution to be compromised in a way, for example, by its
dealers, lending officers or other staff exceeding their authority or conducting business in an unethical or risky manner.
Operational risk management in financial institutions

Chapter 4 – Risk strategies
4.1 Introduction

Financial institutions have reached the stage where they acknowledge the urgency of addressing operational risk within their organisations. The distinction between the different risk categories that a financial institution is exposed has been addressed in Chapter 2. Operational risk has been expanded on in Chapter 3. It was also noted in Chapter 3 that the conclusion can be drawn that it might ultimately be better to define effectively what operational risk management is rather than defining operational risk. The reason is that if a financial institution is able to define operational risk management effectively and clearly, it will know how to define operational risk.

Kloman (2000, www.riskreport.com) says the following about risk management strategies: "My good friend and reader in Milledgeville, Georgia, Dr David Block, suggests three great risks of existence, to which I have added animal descriptors". The three great risks of existence are listed in Table 4.1.

<table>
<thead>
<tr>
<th>Animal descriptor</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Ostrich</td>
<td>To take no risk</td>
</tr>
<tr>
<td>The Grasshopper</td>
<td>To believe that there are no risks (with the corollary that all is predictable)</td>
</tr>
<tr>
<td>The Mule</td>
<td>To accept the risks that are given to us as the risks that we must face.</td>
</tr>
</tbody>
</table>

Table 4.1 Three great risks and their animal descriptors (Kloman, 2000, www.riskreport.com)

Practising risk managers should avoid acting like any of these animals. Exploration, caution and scepticism should be balanced in equal measures, perhaps in ways that could be compared, in animal terms, to an Owl or even the Hedgehog from the aphorism of Archilochus (Kloman, 2000, www.riskreport.com).

These "three great risks" remind us of the prayer of St Francis of Assisi: "Oh Lord, give me the courage to change the things that must be changed, the serenity to accept the things that cannot be changed, and the wisdom to know the one from the other".
It is reasonable to conclude from the above that the risk appetite, i.e. the level of risk a financial institution is prepared to accept, as well as the operational risk levels within the institution play a major role in setting a strategy for operational risk management. The level of risk aversion in a financial institution or the willingness of that institution to take risks determines the level of risk it is prepared to accept.

Residual risk is the risk that has been identified by the financial institution, but is not being managed through risk controls. Residual risk also plays a role in strategy setting, because this will determine what level of risk a financial institution is prepared to accept, without directly controlling that risk.

Hence, even under given cost-to-benefit conditions, an aversion to risk often dictates what the risk management programme/strategy will be. Valsamakis concludes in his chapter on the principles of risk management that risk aversion is indeed a major motive influencing the risk manager (Valsamakis, Vivian and Du Toit, 1996: 58-59).

Risk appetite differs from risk manager to risk manager, implying that each financial institution might adopt a different risk strategy. In order to determine the level of risk that a financial institution will accept, the risk factors to which it is exposed must be measured. Therefore, before a meaningful study of operational risk management strategies can be conducted, it is necessary to explore who should be responsible for operational risk management.

4.2 Who should manage operational risk?

The role of the operational risk function is to add a secondary level of control over risks rather than controlling the risks directly. Accordingly, the actual function of controlling operational risks should manifest itself in the line managers in the business. The manpower requirement for actually managing enterprise operational risk should therefore be relatively limited (Kingsley, Rolland, Tinney and Holmes, 1998:12).
The typical operational risk manager should possess strong quantitative and analytical skills, together with an appreciation of the other section of risk management with which the operational risk function is integrated. This will typically include the market, credit and underwriting risk functions in the financial institution. Furthermore, an operational risk manager can be successful only if he/she has a thorough understanding of the institution’s business and processes, the drivers of risk and the processes of control (Kingsley, Rolland, Tinney and Holmes, 1998:12).

Cooper (1999, www.financewise.com) posed a final question to the panel: “How do the level and type of resources dedicated to operational risk in your institution compare with those dedicated to market or credit risk?”

- Michael Ong, Senior Vice-President ABN AMRO Bank (Chicago): As a new area, there are never enough resources dedicated to operational risk. Our operational risk function is at a preliminary stage and the executive committee is aware of the need to address both management and measurement.

- John Wilmot, Managing Director, Corporate Treasury Chase Manhattan Bank (New York): The focus at Chase is on prevention and control of operational risk, both at a centralised corporate level and at business unit level. Our overall effort is comparable to that of market and credit risk, while the cost is greater because the focus is less dependent on analytical measurement systems and more dependent on self-assessments, audit and control processes.

- Bob Mark, Head of Risk Management, CIBC (Toronto): Our centralised operational risk group is headed by a vice-president, with six risk managers. As with credit and market risk, operational risk management is a partnership between the business unit (the frontline risk takers) and risk management; risk mitigation (e.g. corporate insurance); risk-adjusted return on capital and internal audit.

- Douglas Hoffman, CEO of Operational Risk Bankers Trust (New York): For most firms, the level of resources dedicated to operational risk is lower than for credit and market risk. Small firms rely on existing internal controls and internal audit. Medium to large firms have started dedicating staff and organisation structures. Even the largest firms
only have a handful of dedicated professionals. But this will change as the discipline evolves and more senior management teams recognise the value of quantifying and mitigating operational risk.

4.2.1 Operational risk management at operational level
An analysis of the above comments indicates that the responsibility for managing operational risk is allocated to many different resources. The name indicates that operational risk occurs at operational level in a financial institution and that middle management and staff at supervisory level should therefore be responsible for operational risk management on a day-to-day basis. There is certainly a case to be made that operational risk also exists at executive level. Reference to the various definitions described in this document indicates that strategic issues are also involved, for example, business continuity, preservation of life and cost mechanisms to control risk. If this is true, operational risk management requires the attention of every employee in a financial institution.

4.2.2 Operational risk management at executive level
It is assumed that operational risk management starts at executive level. Their function would, as in normal business practice, include strategy setting and the implementation of a business plan to develop and implement operational risk management programmes in the financial institution. Once executive management accepts ownership for operational risk management, it becomes their responsibility to ensure that it is done effectively and to drive the implementation thereof throughout the organisation.

An analysis of the collapse of Baring Bank revealed that operational risks and failings had been identified long before the collapse, but that the company had failed to escalate and address the problems properly (eRisks, 2000, www.erisks.com).

An effective operational risk function requires:
- appropriate management and staff supervision to ensure that risks and exposure are properly analysed and escalated to the correct level;
- access to and support of the highest levels of management;
- buy-in from business and support management to the process and acceptance of their responsibility to react;
- management awareness of the sources of revenue and the causes of losses; and
- an action-tracking mechanism to ensure necessary action is taken (Kingsley, Rolland, Tinney and Holmes, 1998:13).

It is clear from ABSA's Annual Reports of recent years that responsibility for operational risk management was accepted at executive and various other levels. This is supported by comments in the financial statements of other financial institutions in South Africa:

- "The Risk Policy and Information Systems Policy Committee are the two senior management forums responsible for Operational and Technological risk management. Both these committees report to the board of directors on a quarterly basis." (BOE, 1999:67.)
- "The Group limits potential risks by acting to prevent, detect and recover any losses incurred. While operational management is primarily responsible for this risk, Investec Group Risk Division has also taken various steps to ensure that operational risk is minimised." (Investec, 1999:38.)
- "...management formed a risk committee that focuses only on risk and meets weekly. In addition, committees that consider operational risks in the businesses were formed during 1999." (Gensec, 1999:45.)
- "...and are closely monitored by the Risk and Audit committees [that are board committees] through the internal audit, risk and compliance functions." (FirstRand, 1999:25.)

4.3 A framework for operational risk management

To ensure that operational risk is managed in a formal structured manner, it is important for this to take place in a formal framework, which is accepted by all relevant role-players in the financial institution. It is therefore required that such a framework be formally documented, has support at executive level and is clearly and efficiently communicated throughout the organisation.
Furthermore, in this aspect of operational risk, there appears to be very little standardisation in the industry. This can be attributed to the fact that operational risk management as a discipline is still evolving, and changes over the next number of years are not excluded.

PwC suggests an operational risk framework based on the results for their survey conducted. Another is suggested by ABSA in their annual report for 2000. There are few similarities between the two suggestions. It is hoped that the debate around the operational risk topic will result in more clarity.

The following is a suggested framework derived from the two examples quoted and from the context of operational risk management discussed in this document. The suggested framework is more detailed than the two by ABSA and PwC, and already brings more clarity to the framework in which operational risk management should operate. This framework is illustrated in figure 4.1.

![Figure 4.1 Operational risk framework](image)
The recommended framework contains the following elements:

4.3.1 Strategy
Risk management starts with the overall strategies and objectives of the institution and the subsequent goals for individual business units, products or managers. It is extremely important to start with strategy-setting as this will indicate and set guidelines for the financial institution’s risk appetite.

4.3.2 Risk Policies
Risk strategy is complemented by operational risk management policies, which are a formal communication to the organisation as a whole on the approach to, and importance of, operational risk management. Policies will typically include a definition of operational risk, the organisation approach and related roles and responsibilities, key principles of management, and a high-level discussion of information and technology (PwC, 1999, www.pwcglobal.com).

4.3.3 Methodologies
It is important for every organisation to research, evaluate, develop and implement a methodology (or combination of methodologies) for operational risk management.

Such methodologies could be of a qualitative or quantitative nature. Whichever methodology is accepted, it is important to decide on the following:
- The role, if any, that risk and control self-assessment will play.
- How operational risk will be identified, assessed, optimised.
- The reporting that is required and to what level.
- The process to be followed.

4.3.4 Risk Identification
Risk identification is the first step in the risk management process. The process required has to be documented carefully, addressing the role of workshops, questionnaires, risk structures and self-assessment.
4.3.5 Risk assessment

Programmes to ensure that controls and policies are being followed and determine the level of severity should be developed. These may include process flows, self-assessment programmes, and audit programmes. A combination of financial and non-financial measures, risk indicators, escalation triggers, and economic capital to determine current risk levels and progress goals should be identified and quantified (PwC, 1999, www.pwcglobal.com).

It is important in the operational risk management process not to only focus on the severity of an event, but to assess the probability or likelihood of the occurrence of a risk as well.

4.3.6 Risk optimisation

Risk optimisation is also referred to as risk mitigation in some documents. It refers to specific controls or programmes designed to reduce the exposure, frequency or severity of an event or the impact of an event or to eliminate (or transfer) an element of operational risk (PwC, 1999, www.pwcglobal.com). Risk optimisation includes lowering and increasing control levels depending on the cost of the controls relative to the seriousness if the risk materialises. Examples of controls include business continuity planning, IT security, compliance reviews, project management and merger integration and insurance. These controls should address the probability that a risk will occur as well as the impact if a risk materialises. It is thus important to design preventative as well as contingent control measures.

4.3.7 Risk monitoring

Once all the operational risks have been identified and controls have been implemented, the need to understand what the implications of these risks are to the business becomes pronounced. Tracking the current level of operational risk and the effectiveness of the management functions becomes the focus. Risk indicators (both quantitative and qualitative) and escalation criteria (which are goals or limits) are established to monitor performance. Measures are consolidated into an operational risk scorecard along with other relevant issues for senior management (PwC, 1999, www.pwcglobal.com).
4.3.8 Reporting
To make the monitoring process meaningful, reporting of the results to stakeholders should take place. Stakeholders include all relevant levels of management, the Board of Directors, shareholders, regulatory bodies and clients.

4.3.9 Integration with business risk
In recognising the value of lessons learned by each business unit and the complimentary nature of the individual tools available within each business unit, management should focus on integrating and implementing processes and solutions. In balancing business and corporate values, qualitative versus quantitative, and different levels of management needs, risk quantification is now fully integrated into the economic capital processes and linked to compensation. Quantification is also applied to make better cost/benefit decisions on investments and insurance programmes (PwC, 1999, www.pwcglobal.com).

However, this integration goes beyond the processes and tools. In leading companies, operational risk management is being linked to the strategic planning process and quality initiative. When this link is established, the relationship between operational risk management and shareholder value is more directly understood.

4.4 An organisational structure for operational risk management

4.4.1 Organisational structure
The motivation behind managing operational risk in a financial institution and in what framework this should be done has been discussed. Attention will now be paid to the organisational structure that should exist in a financial institution to take responsibility for the management of operational risk.
The organisational structure suggested by PwC as a result of their survey on operational risk management is illustrated in figure 4.2.

The structure adopted by ABSA is illustrated in figure 4.3.
It is interesting to note that the organisational structure adopted by ABSA allows for a group risk committee, whereas the structure suggested by PwC allows for an operational risk committee. The inclusion of a risk committee in the organisational structure is noteworthy, as
many institutions are of the opinion that the audit committee should also fulfil the role of a risk committee. The following reasons are given as to why an audit committee cannot fulfil the role of a risk committee:

- Although an audit committee will review audit risks and the control environment of the organisation, it is not its primary function to review risk profiles and the risk optimisation measures.
- It is important that a risk committee be instituted to oversee risk management from an enterprise-wide risk management perspective. Risk management is referred to here in its broadest sense and includes business risk as it was described previously in this document.
- Due to increased responsibilities, the Companies Act and other acts as well as corporate governance principles place on non-executive directors, the risk committee referred to here should also include non-executive directors enabling them to be aware of the risk involved.
- The risk committee should be a sub-committee of the board of directors as is the case with a group audit committee.

### 4.4.2 Recommended organisational structure

Having reviewed the above organisational structures, the following structure for managing operational risk in financial institutions is proposed:

![Operational risk management structure](image-url)
4.4.3 Responsibilities

Having the necessary organisational structure in place is not sufficient. In order for the organisational structure to support the financial institution's drive, responsibilities for operational risk management should be specifically assigned to ensure that each entity within the structure has the right to exist. The organisational structure in itself does not provide this.

When a financial institution develops an organisational structure, the responsibilities of each entity in the organisational structure should be reviewed to test the validity of the recommended organisational structure and to ensure that it is a viable function prior to implementing the structure.

The following responsibilities have been identified for the respective entities in the proposed operational risk management structure:

4.4.3.1 Board of directors

The Companies Act and various other acts place certain responsibilities on the board of directors. In its recommendations on corporate governance, the King Commission increased the pressure on the board of directors.

Section 38 of the Banks Act No. 94 of 1990 (SARB, 1990) specifies that the board of directors of a financial institution is ultimately responsible for ensuring that an adequate process of corporate governance is established and maintained. The process of corporate governance is deemed to include the maintenance of effective risk management by a financial institution. An individual who are holding, or are proposing to hold, the office of a director or an executive officer of a financial institution, should complete a statement that, amongst others, he or she has a basic knowledge and understanding of the risks to which financial institutions are exposed.

It could thus be argued that the board of directors would be in failing their duty if risk was not considered. It is impossible for non-executive directors to be involved in the day-to-day
management of any organisation, but they too have a responsibility to ensure that the organisation addresses risk management, including operational risk management effectively, through adequate structures, strategy, policies and procedures (RAU, 1996:19).

4.4.3.2 Group audit committee

In broad terms, an audit committee has to satisfy itself of the adequacy of the control environment in an organisation. In managing operational risk, the adequacy and effectiveness of the control environment will determine the operational risk levels (KPMG, 2000, www.us.kpmg.com).

The group audit committee's responsibilities in the operational risk structure are focused on reducing operational risk through an adequate control environment. As a subcommittee of the board of directors, the group audit committee is responsible for reporting to the board on these matters.

4.4.3.3 Group risk committee

The recommended group risk committee should also act as a subcommittee of the board of directors and should consist of non-executive directors, executive directors, a chief risk officer and senior management in the organisation. The committee should focus on all risk areas within the organisation.

The responsibilities of this committee, especially regarding operational risk, should at least include the following:

- Review of the group operational risk management structure and the responsibilities of each entity in that structure.
- Review of the company strategy, policies and standards regarding operational risk.
- Review of the operational risk management methodologies that are being used.
- Review of operational risk profiles, which were developed at organisational and business unit levels and optimisation measures to reduce risk levels (NoRMaC, 2000, www.allianceonline.org).
4.4.3.4 Group executive committee

The group executive committee normally consists of executive directors. They are directly responsible for the management of the organisation, implying that they are also responsible for risk management. The responsibilities described below refer to responsibilities at organisational and business unit levels. They do not include responsibilities at day-to-day operational risk management level within the business units, as the Group executive committee is responsible for risk management at strategic level.

Their responsibilities regarding operational management for the organisation should include ensuring that:

- An adequate operational risk management structure is developed for and implemented in the organisation.
- The operational risk management policy is comprehensive and that the guidelines set in the policy cover the activities and operational risks in the organisation.
- Effective operational risk management methodologies are being developed and employed.
- Review organisational-wide risk levels through the risk profiles that were developed and that determine, from an organisation point of view, what is required to reduce the high risk areas.
- Review operational risk management optimisation measures taken to ensure that it is adequate to manage operational risks effectively and reduce the relevant risk level (KPMG, 2000, www.us.kpmg.com).

4.4.3.5 Chief risk officer

The chief risk officer should report directly to the chief executive officer of the organisation and should operate on an organisation-wide level. His/her main responsibilities include the risk management function of the organisation.

With regard to operational risk management, his/her responsibilities include:

- The development of an adequate operational risk management structure.
- Staffing of the operational risk function in the organisation.
• Setting of an operational risk management strategy, policy and standards for the organisation.
• Reporting on operational risk levels.
• Ensuring that the operational risk management function operates effectively (Lee, 2000, www.rims.org).

4.4.3.6 **Head of operational risk**

The head of operational risk reports to the chief risk officer. He/she is responsible for organisational-wide operational risk management.

The responsibilities of the head of operational risk include:

- The development and implementation of the operational risk management strategy.
- The development, communication and implementation of operational risk management policies.
- The development, communication and implementation of operational risk management methodologies to operate at organisational-wide, business unit and operational levels.
- The identification, measurement, optimisation and monitoring of operational risk at organisational level.
- A controlling function regarding the identification, measurement, optimisation and monitoring of operational risk at business unit level.
- Reporting on operational risk levels.
- Training to the organisation on operational risk management principles, methodologies and trends.
- Ongoing research on international developments and operational risk management best practice.

4.4.3.7 **Group compliance officer**

A recent statutory development is the establishment of a group compliance officer in financial institutions. Section 47 of the Banks Act No.49 of 1990 (SARB, 1990) requires a financial institution to establish an independent compliance function as part of its risk management framework, in order to ensure that the financial institution continuously...
manages its regulatory risk, i.e. the risk that the financial institution does not comply with applicable laws and regulations or supervisory requirements.

The responsibilities of this function in South Africa mainly relate to statutory and image risk within financial institutions. Statutory and image risks are classified as categories of operational risks.

For the purposes of this document, the detailed responsibilities of the group compliance officer need not be listed, as they would concur mostly with those of the chief risk officer. The difference between the two functions should however be noted in the sense that the group compliance officer's function is limited to the two specific risks mentioned.

4.4.3.8 Group internal auditor
The group internal auditor's function is well documented (KPMG, 2000, www.us.kpmg.com). His/her responsibility regarding operational risk management is however not that well documented. He/she plays a role in all the aspects of operational risk management, but not in a risk management capacity, but a monitoring capacity. His/her responsibilities would include:

- The evaluation of risks for relevancy and completeness.
- The evaluation of risk levels for accuracy.
- The evaluation of the control environment within which operational risks are managed for adequacy and effectiveness.
- The identification of residual risk.
- Reporting on his/her findings.

The internal audit function is complimentary to the operational risk management function and cannot replace the risk management function.

4.4.3.9 Business unit executives
Business unit executives are classified in two different groups for the purposes of this document. The first group is referred to as Operating Executives. They are responsible for a
specific operating unit, managing the activities related to business development with a profit motive. The second group is referred to as Specialist Functions. They are responsible for specialist support to the Operating Executives and their respective operating units.

Operating executives and their operating units are responsible for the day-to-day risk management in their individual units. They should have risk management staff in their division responsible for developing and implementing operational risk management strategies specifically relating to that business unit.

Specialist Functions exist because they are experts in a specific area, for example information technology management, people management, risk management. They provide support to the operating executives regarding operational risk management within their specialist field.

4.5 Mapping risks across the organisation

The concept of enterprise-wide risk management, i.e. managing risks across the organisation and briefly discussed in Chapter 2, is illustrated in figure 4.5.

![Figure 4.5 Mapping risks across the enterprise (OSI, 2000, www.osi.co.uk)](image)

It is evident from what has been indicated thus far that financial institutions have spent years developing processes, models and risk profiles for credit and market risk. Recently, underwriting risk was added to the list, necessitated by the move to bancassurance.
Bancassurance is the art of combining the activities of banking, insurance and investments (BAI, 1999, www.bai.org).

It follows naturally that operational risk would follow if the vision of enterprise-wide risk management is pursued. Managing operational risk in a financial institution is a must to complete the total risk management picture.

Now that the organisational structure required for operational risk management and the responsibilities of the parties involved in operational risk management have been defined, and prior to exploring the risk management strategies available to management, it is necessary to explore the principle of operational risk measurement.

4.6 Operational risk measurement

It is well known that, apart from the problems experienced in defining operational risk, another serious problem posed to operational risk managers is that of measuring operational risk. There is no universally-accepted method to measure operational risk and, in practice, it has been found that financial institutions adopt methodologies that they deem appropriate.

Risk measurement methodologies can broadly be categorised into:
- qualitative methodologies; and
- quantitative methodologies.

The methodologies accepted currently by financial institutions to measure operational risk tend to focus on qualitative aspects. Due to the application of quantitative operational risk measures not being widely acknowledged, this paper will focus its discussions on qualitative risk measurement methodologies.

It appears from most qualitative risk management approaches that the probability of the materialising of a risk and the impact (severity) thereof is the risk materialises plays a very important role in operational risk management (ABSA, 1999: 40).
In Chapter 2, it was stated that uncertainty is one of the key elements of risk. In the insurance industry, probability theory plays a major role in an effort to formulate a dimensional expression of the concept of chance and to facilitate decision-making under conditions of uncertainty (Valsamakis, Vivian and Du Toit, 1996: 31).

Another key element of risk is loss. The average frequency (times) with which the average severity of loss occurs depicts an insurer’s expectation of loss. An insurer’s expectation of loss can therefore be interpreted as a risk to the insurer (Valsamakis, Vivian and Du Toit, 1996: 31).

If these principles are applied to determine operational risk levels, it is possible to derive certain high-level operational risk management strategies from it. The operational risk management strategies are listed in Table 4.2.

<table>
<thead>
<tr>
<th>Principle</th>
<th>Risk management strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>High probability and high impact if the risk occurs</td>
<td>Risk should be avoided</td>
</tr>
<tr>
<td>High probability and low impact if the risk occurs</td>
<td>Risk should be controlled</td>
</tr>
<tr>
<td>Low probability and high impact if the risk occurs</td>
<td>Risk should be transferred</td>
</tr>
<tr>
<td>Low probability and low impact if the risk occurs</td>
<td>Risk should be accepted</td>
</tr>
</tbody>
</table>

*Table 4.2 Operational risk management strategies*

These high-level risk strategies are illustrated in figure 4.6.
4.7 Risk avoidance as an operational risk management strategy

When both the probability and the severity ratings are high for a particular risk, it would, from an operational risk point of view, arguably be a better strategy to avoid the risk altogether.

Sometimes it is not possible to avoid the risk because of the inherent nature of the risk. A good example is the risk of an explosion in an explosives manufacturing plant. The risk of an explosion cannot be avoided, because it is inherent in the manufacturing process. An example of a risk that is inherent in financial institutions is the risk of fraud.

Situations in which it is not wise to avoid the risk may also arise. Consider the following statement:

"Few things are more harmful to retirement savings than risk avoidance" (Carlson, C.B., 2000, www.buyandhold.com).

On the surface, this sounds like a silly statement. Avoiding risk is a good thing, right? Unfortunately, purging a portfolio of risk may also mean relegating your portfolio to returns
that are inadequate for building and sustaining a retirement nest egg (Carlson, C.B., 2000, www.buyandhold.com).

This is also applicable to operational risk management strategies. Avoiding the risk of an explosion could lead to the closure of the explosives manufacturing plant. Similarly, if a financial institution chose to avoid the risk of fraud, it would not be able to exist.

Taking the above arguments into account, it can be concluded that while the risk management function seeks to minimise liability, the strategy of risk avoidance attempts to avoid liability.

Minimising liability in a scenario where both the probability and severity levels of a particular risk are high will require a risk management strategy where emphasis is placed on both preventative and contingent controls (Productivity development, 75). The aim of preventative controls is to reduce the probability of the risk materialising, and the aim of contingent controls is to reduce the impact should the risk occur.

4.8 Risk control as an operational risk management strategy

The concept of risk control is particularly difficult in operational risk management. In practice, risk control could describe the function that an operational risk manager must perform to manage all risk levels, because all risk levels have to be controlled. For the purposes of this study, risk management is used to describe the overall control function performed by the risk manager to distinguish it from the specific function of risk control, which is described in the following paragraphs.

The basic principle of risk control is that when the probability rating of a particular risk is high and the severity rating is low, the best risk management strategy is to control the risk, mainly by improving preventative controls. As the potential impact is low, less focus on contingent controls is required. Although contingent controls cannot be ignored in this situation, it requires less emphasis.
An example where risk control will be applied is the risk of theft and fraud regarding petty cash, with a float of R1000. Even if the incidence of fraud and theft is high, the severity level is very low due to the limited maximum amount to be lost at any one time or even over a period, if the loss remains undetected.

Risk control is the entire process of policies, procedures and systems an institution needs to manage all the risks resulting from its transactions prudently, and to ensure that they are within the bank's risk appetite (IFRI, 2000, http://newrisk.ifr.ch/00013407.htm).

Company policies, procedures and systems are proactive attempts to minimise risk. This can therefore be classified as preventive controls as far as operational risk management is concerned.

Resulting from the Basle Committee's ("The Committee") increasing focus on sound internal controls is a report on internal control systems. The "Framework for the Evaluation of Internal Control Systems" was released in October 1998, following an earlier draft issued in January of the same year (The Basle Committee, 1998, www.bis.org). The Committee notes in its report that "an analysis of the problems related to the losses [incurred by several banking organisations] indicates that they could probably have been avoided had the banks maintained effective internal control systems. Such systems would have prevented or enabled earlier detection [reduced the probability] of the problems that led to the losses, thereby limiting damage to the banking organisation".

The Committee noted furthermore that the control breakdowns typically seen in recent problem bank situations could be grouped into five broad categories:

- Lack of adequate management oversight and accountability, and failure to develop a strong control culture within the bank.
- Inadequate assessment of the risk of certain banking activities, whether on or off balance sheet.
• The absence or failure of key control activities, such as segregation of duties, approvals, verifications, reconciliations, and reviews of operating performance.
• Inadequate communication of information between levels of management within the bank, especially in the upward communication of problems.
• Inadequate or ineffective audit programmes and other monitoring services (The Basle Committee, 1998, www.bis.org).

The above discussion clearly indicates the importance of risk control as part of the operational risk manager's operational risk management strategy.

4.9 Risk transfer as an operational risk management strategy

The third possible risk management approach exists when the probability rating for a particular risk is low and the severity rating is high. The best strategy in this instance is to transfer the risk by reducing the impact should the risk occur. As the potential impact is high, more focus on contingent controls is required. This time, preventative controls cannot be ignored, but they require less emphasis.

The purpose of contingent controls is to reduce the impact of a risk that materialised due to the failure of all existing preventative controls. An example of contingent control is the development of formal and detailed business continuity plans to enable the financial institution to continue its business should their computer facilities be totally destroyed, for instance. Of course, the financial institution will have prevention programmes in place to prevent the risk of destruction from happening. In the unlikely event (low probability) that this does occur, formal plans should be in place to enable the financial institution to continue business elsewhere. Disaster recovery planning is an integral part of business continuity planning.
Risk transfer is achieved by applying one or more of the following sub-strategies or a combination thereof:

- Risk financing through external financing
- Self-insurance through internal financing
- Outsourcing
- Contractual arrangements.

4.9.1 Risk financing through external financing techniques

McCarthy (1994, www.riskreports.com) describes risk financing as: "When a loss occurs, it inflicts costs. How these costs are met is the subject of risk financing".

The strategic decision regarding risk financing is therefore the decision to transfer or retain the risk.

Risk financing through external financing techniques includes:

- pre-loss techniques through captive insurance companies and/or commercial insurance;
  and
- post-loss techniques through external financing facilities, e.g. a loan from another institution (Valsamakis, Vivian and Du Toit, 1996: 62).

4.9.2 Self-insurance through internal financing

Self-insurance, as a risk transfer strategy, involves the creation of internal reserves to fund losses as they occur. The internal funding is a continuous process increasing reserves according to the operational risk manager’s perception of losses that will occur, taking into account his/her strategy for transferring risk externally.

This sub-strategy will ensure that losses are not directly reflected on the bottom-line of the financial institution, but are transferred to, or absorbed by, the internal fund that was created.
4.9.3 Outsourcing

Financial institutions increasingly use outsourcing as a method of transferring risk. The operational risk manager transfers certain strategic, but usually non-core activities to one or more third parties or business partners, using outsourcing as the vehicle with which to do so.

A recent example is ABSA's outsourcing arrangement with AST-A (McNulty, 2000, www.fm.co.za). The latter company's main activities consist of the maintenance of PC/LAN environments on behalf of financial institutions and other clients as well as the supply of disaster recovery facilities and services on behalf of clients.

The risk of managing these specialised activities is outsourced (transferred) to a business partner who is more knowledgeable in the management of this particular activity and thus better equipped to deal with these specific risks.

4.9.4 Contractual arrangements

Contractual arrangements are similar to outsourcing arrangements and refer to concluding contracts with companies and or individuals to perform tasks on behalf of the financial institution. These contractual arrangements differ from outsourcing in the sense that they refer to new tasks, i.e. tasks that were not inherent in, or previously performed by, the financial institution. Examples of these are the provision of courier services and the provision of physical security services.

This sub-strategy is increasingly being applied as part of the financial institutions overall operational risk management strategy.

4.10 Risk transferring or risk sharing

The question that has to be asked is whether the financial institution relieves itself from risk when risk is transferred to a third party by contractual insurance, outsourcing or other contractual arrangements.
Although the concept of risk transfer is a well-established concept emanating from the insurance world, McCarthy (1994, www.riskreports.com) holds an interesting view that should be noted.

"Do we simply try and absorb them or should we share them with others? I emphasise the word "share" rather than "transfer" in the strong belief that we can never deny our ultimate ownership of risks that we create. There is no such thing as "risk transfer," there is only "risk sharing." Some risk financing techniques are in common use. Many operational losses are treated, in part, by commercial insurance. Yet the vast majority of loss is financed internally, consciously or not."

The danger of transferring risk is that the financial institution doing so might move to an abdication frame of mind. But what happens if the external insurance company to which risk was transferred by way of insurance fails financially? Or what happens if the security company providing the security services to the bank causes bodily harm to its clients? Or if the company responsible for the maintenance of computers does not deliver as promised?

It is clear that a financial institution cannot totally transfer risk. At best, risk can only be shared. Responsibility still rests with the financial institution to ensure that transferred risk is well managed. Leaving the responsibility for risk to the company to which the activity was contracted to is an act of abdication and a foolish one too.

4.11 Risk acceptance as an operational risk management strategy

In general, financial institutions will be willing to accept risks if the probability of the risk occurring is low and the impact on materialisation is low. A prerequisite will be that the cost of the control measures to keep the risk levels low should be in line with the possible losses. Less focus is placed on both preventative controls and contingent controls. This is a consciously, deliberate strategy of operational risk management.
As mentioned earlier in this chapter, it is important for every operational risk manager to be aware of residual risk, which is uncontrolled due to the fact that it might be an unidentified risk. By default, this risk is accepted, but only because of its nature and not by a deliberate and conscious strategy decision. Residual risk is any risk manager's biggest headache. Therefore, the prudent risk manager should have programmes in place to ensure that residual risk is not prevalent.

4.12 Conclusion

Developing and implementing an operational risk management strategy is essential in any operational risk management programme. Responsibility of the operational risk management strategy should be set at executive level and this should be reflected in the organisational structure.

The principles applicable to strategy setting are that it should be:

- clear and concise;
- well communicated in the financial institution; and
- accepted by all stakeholders.

A number of operational risk management strategies are available to financial institutions. A financial institution can decide to avoid, control, transfer, share or accept the operational risk to which they are exposed.
Operational risk management in financial institutions

Chapter 5 - Conclusion
5.1 Results

From the analysis of operational risk management in this document, there are a number of important issues that are very clear when the topic is discussed. These issues can be summarised as:

- Despite all the attention given to the topic of operational risk management in the last number of years, financial institutions and regulatory authorities still experience great difficulty in defining both operational risk and operational risk management.

- Although a globally-accepted definition of operational risk has not been formalised, financial institutions and regulatory bodies acknowledge that unmanaged operational risk poses a huge threat to financial institutions. This is specifically evident from what happened, on an international level, with Barings Bank (as discussed in Chapter 2), and locally with Business Bank. Business Bank suffered substantial losses due to insufficient operational risk management procedures in place to identify a single transaction exposing them hugely in the Macmed transaction.

- Another factor contributing to the haziness surrounding operational risk is the lack of a generally-accepted methodology for measuring operational risk, be it quantitative or qualitative.

The above refers to areas in operational risk management where there is no or very little consensus. There are however areas in the operational risk management discipline where a fair amount of consensus has been reached. These include:

- It is widely acknowledged that operational risk management is a new discipline.

- The processes for managing operational risk are similar, if not identical, to those in place for credit and market risk.

- Both financial institutions and regulatory authorities acknowledge that there is a need for standards to be developed within the financial services industry for defining, measuring and managing operational risk.

- The board of directors is ultimately responsible for operational risk management within its financial institution.

- Senior management has to accept its responsibility to develop a consistent and accepted operational risk framework.

- The operational risk framework adopted in a financial institution must stress a dynamic programme of operational risk identification, assessment and optimisation.
This will inevitably lead to more comprehensive data on risk incidents and related financial losses, which could be accumulated in a database to assist in improving operational risk management procedures.

- Financial institutions are obliged by the Bank Act to report operational risk incidents to their respective stakeholders.
- Risk management efforts regarding operational risks can succeed only if coordinated with efforts made in credit and market risk management.
- Lastly, financial institutions acknowledge the fact that in order to ensure that operational risk management in the individual institution succeeds, it is important to develop and implement an organisational culture that provides the necessary motivation, incentives and training to support a culture of risk awareness and rapid risk response.

5.2 Conclusions

No clear-cut definition of operational risk or operational risk management has thus far been accepted in the financial services industry. There seems to be some pointing in the direction of technology, systems and procedures. This is however not the exhausted list of areas giving rise to operational risk. The definitions and descriptions adopted by the financial institutions in South Africa, as is evident from comments included in literature, add other aspects to the operational risk argument, such as business continuity and safety of human life. All of these definitions seem plausible, but do not succeed in convincing the role-players within the operational risk arena that an all-encompassing definition has been reached. That is the reason why it is not universally accepted.

To settle the argument on operational risk, it is necessary for a global body that enjoys worldwide acknowledgement and credibility, for example the Basle Committee or the Global Association of Risk Professionals ("GARP"), to take the initiative in developing an acceptable definition. Their approach should focus on getting worldwide input from knowledgeable risk professionals. This may be a time-consuming exercise, but should be worth the effort, as financial institutions would be given a clear-cut direction.

The author concludes the subject of operational risk management with the following suggested definition of operational risk:
Operational risk is the risk to which all financial institutions are exposed to as a result of their daily operations. Furthermore, operational risk has the following characteristics:

- If not managed properly, operational risk will result in financial losses to the financial institution.
- Operational risk has no profit potential, and due to this, it could be classified as a pure risk.
- Operational risk is inherent in the activities undertaken by the financial institution, and not limited to the financial transactions in which financial institutions are engaged.
- Operational risk cannot be avoided in total, but the potential losses can be decreased with an effective operational risk management system.

5.3 Recommendations

As the discipline of operational risk management has not been formalised, a number of recommendations could be made. The recommendations that result from this study are limited to the subjects of:

- the management of operational risk; and
- the quantification of operational risk.

5.3.1 The management of operational risk

This study proved that operational risks have to be managed. The discipline of operational risk management is well recognised, despite unresolved issues and definitions. This fact is accepted by all financial institutions and other bodies, in the financial services industries, included in this research. Research on operational risk management is being done in some way by all these financial institutions. The majority of Central Bankers are also giving attention to operational risk management. Even the South African Reserve Bank ("SARB") has addressed this problem, even though South Africa is considered a Third World country by most.
World bodies such as those mentioned previously have also done their fair share. GARP, for example, allocates space in its periodical, The Risk Professional, to this debate.

But the battle is lost if all the research and discussions on operational risk do not progress further than numerous notes on paper. In order for financial institutions to benefit from all these research activities, formal, structured procedures for managing operational risk should be developed, implemented and maintained within financial institutions.

5.3.2 The quantification of operational risk

As mentioned previously, a qualitative approach to measuring operational risk is followed by most financial institutions, with very little evidence of quantitative approach. The Basle Committee is however keen to see a quantitative approach being developed. This is evident from suggestions in their working papers that financial institutions should allocate a capital charge to operational risk, as they do with credit and market risk.

My conclusion is that a numerically-driven quantitative approach will be difficult to develop, because of the wide spectrum that operational risk management has to cover. The list of incidents that could give rise to operational risk is almost endless and includes factors such as fraud, theft, loss of life, negligence, loss of reputation, opportunity cost, and immature systems and procedures. To find a single method of quantification that would be accepted by financial institutions and regulatory bodies worldwide is a challenge. But it is a challenge that, in the process of improving the efficiency with which operational risk is managed, should not be forgotten, but actively pursued.

In the meantime, authorities should allow the current qualitative methodologies adopted by financial institutions to mature and to standardise in approximately the same direction. This could happen fairly soon as a certain amount of consensus already exists in the marketplace on the usage of probability and severity ratings.
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