

***The use of systems thinking to analyse  
Nedbank's transformation process to present a  
holistic approach for effective change in the  
knowledge world.***

***Presented by:***

**Priyabash Sharma Roopanand**

***Supervisor: Mr Stanley Hardman***

***A Dissertation submitted to the Faculty of Engineering, University of KwaZulu-Natal,  
Durban, in partial fulfilment of the requirements for the degree of Master of Science***

***December 2005***

### **Acknowledgements**

My sincere appreciation and gratitude go to the people that supported me and contributed to the completion of this dissertation:

To my mother, family and friends, thank you for your understanding, support and patience.

To my peers and work colleagues, thank you for your time, valuable contribution and energetic debates that provided food for thought.

To my supervisor, Stan, thank you for affording me the opportunity to experience the trials, tribulations, joys and excitement of the research process. It was certainly a positive influence on my thinking.

Finally, I would like to dedicate this dissertation to my wife, Anjula - Thank you for all your hard work and inspiration. I deeply appreciate your tremendous support, continuous understanding and patience throughout my study. Your love is the inspiration of my thoughts.

### **Declaration**

I declare that this research report is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Science in the University of KwaZulu-Natal, Durban. It has not been submitted before any degree or examination in any other University.

---

Priyabash Sharma Roopanand

1 December 2005

## Abstract

The contemporary approach to change in Nedbank is focused on mechanistic processes with little reference to social systems that exist in organisations. The contemporary approach assumes that an organisation is linear in nature and as such, a reductionist approach is employed for organisational inquiry to address organisational structure, strategy and culture.

This research will focus on employing a systems approach to organisational inquiry to elicit themes that leadership should be aware of, to effect change in a dynamic and complex environment. The argument presented is that organisations are about people that interrelate with each other to achieve organisational goals, and as such exhibit social phenomena that have important implications in defining an organisation's capability for effective change. Therefore, a reductionist approach to organisational inquiry is not desirable and may not be effective for real change.

The research will draw on various concepts within the frameworks of systems thinking, complexity theory, knowledge management and dynamic capabilities to elicit themes to complement Nedbank's existing transformation process.

The results provide recommendations on how management's contemporary role is required to transform in order to address the challenges of organisational change in the knowledge world.

## Table of Contents

<b>Title page</b>	<b>1</b>
<b>Acknowledgements</b>	<b>2</b>
<b>Declaration</b>	<b>3</b>
<b>Abstract</b>	<b>4</b>
<b>Table of contents</b>	<b>5</b>
<b>List of figures</b>	<b>6</b>
<b>Chapter 1: Introduction</b>	<b>7</b>
1.1 Background	7
1.2 The problem statement	9
1.3 Focus of the Study	10
1.4 Objectives of the study	11
1.5 Expectations	12
1.6 Assumptions	12
1.7 Significance of the study	12
1.8 The structure of the dissertation	13
<b>Chapter 2: The literature review</b>	<b>15</b>
2.1. Organisational Change and Systems Thinking	17
2.2. Complexity Theory	34
2.3. Implications of Facilitating Organisational Change in the Knowledge World	51
2.4. Summary	66
<b>Chapter 3: The research design</b>	<b>67</b>
3.1 Research methodology	67
3.2 Research process	74
3.3 Research paradigm	77
3.4 Research validity and reliability	79
3.5 Research assumptions and limitations	81
3.6 Summary	82
<b>Chapter 4: Presentation of research results</b>	<b>83</b>
4.1 Description of Worldviews	84
4.2 Response to research questions	88
<b>Chapter 5: Learning and reflections</b>	<b>97</b>
<b>Annexure A</b>	<b>103</b>
<b>References</b>	<b>105</b>

### List of Figures & Tables

<b>Figure</b>	<b>Description</b>	<b>Page</b>
Figure 1	Tragedy of the commons archetype	23
Figure 2	Fixes that fail archetype	24
Figure 3	Limits to growth archetype	25
Figure 4	Shifting the burden archetype	26
Figure 5	Organisational subsystems	27
Figure 6	Profile of organisational characteristics	28
Figure 7	Circle of experience	38
Figure 8	Circles illustrating unity	40
Figure 9	Illustration of Euclid's theorem	41
Figure 10	Resource creating processes	44
Figure 11	The Lorenz attractor	48
Figure 12	Outcomes of learning	57
Figure 13	Shukla's learning capability model	58
Figure 14	Parson's four functional pre-requisites	58
Figure 15	Media of interchange in Schwandt's learning subsystems	60
Figure 16	Organisational learning systems model	61
Figure 17	The knowledge management framework	62
Figure 18	Conceptual Framework	73
Figure 19	The Research Process	74
Figure 20	Framework for content analysis	79
Figure 21	Nedbank's environmental influences	88
Figure 22	Profile of Nedbank's organisational characteristics	90

<b>Table</b>	<b>Description</b>	<b>Page</b>
Table 1	Traditional and Complex Adaptive Models of Organisational Change	19
Table 2	Assumptions of Traditional and Complex Adaptive Models of Organisational Change	21
Table 3	Summary of Preconditions.	46
Table 4	Cultural barriers	65
Table 5	Description of Worldviews	84
Table 6	Worldviews clustered into themes	85

## CHAPTER 1 INTRODUCTION

### 1.1. Background

Human civilisation has evolved from the age of *hunters & gatherers* to the *agricultural age*, then to the *industrial age*, and now to the *information/knowledge worker age*. This fundamentally impacts the environment we work and live in. According to Drucker:

*“The most important, and indeed the truly unique, contribution of management in the 20th century was the fifty-fold increase in the productivity of the MANUAL WORKER in manufacturing. The most important contribution management needs to make in the 21st century is similarly to increase the productivity of KNOWLEDGE WORK and the KNOWLEDGE WORKER. The most valuable assets of a 20th-century company were its production equipment. The most valuable asset of a 21st-century institution, whether business or non-business, will be its knowledge workers and their productivity”.* (Drucker; noted from the 10<sup>th</sup> Annual Luminary Series: Leadership from the Ground Up, Effectiveness in Changing Times; October 14, 2004)

In view of Drucker’s assertion the focus on knowledge work presents various challenges to the contemporary organisational paradigm that is fuelled with the need *for command and control, cause and effect and prediction and certainty*. This dominant paradigm assumes that organisations are mechanistic in nature and as such, employs a reductionist and linear approach to organisational inquiry. Organisational structures reflect the mechanistic model that thrived in the industrial age where analysts studied the *parts* to understand the *whole*. This has significant implications for leadership when introducing change to a system that is part of a larger system. Keene observed this as a challenge for leadership. *“A deep seated belief accompanying leadership has been the perceived need of being in control and the need to predict and direct the nature and direction of change”* (Keene, 2000: p2). Hence, management requires a paradigm shift to address the challenges of change in the knowledge world.

In the 4<sup>th</sup> quarter of 2003, Nedbank initiated a transformation phase with the intention of achieving its recovery and turnaround targets. The transformation initiatives included a change in strategy, leadership, financial and brand positioning. Nedbank identified four critical competencies that contributed to its demise i.e. the organisation did not have a clear group *strategy* resulting in misalignment among business units. The group *structure* was complex and reflected a lack of direction, lack of accountability, slow decision making, excessive bureaucracy and complex processes to deal with lack of ownership. This contributed to poor *delivery* and resulted in a *culture* of shaming and blaming and superficial alignment between strategy, performance measures and remuneration. (Notes from internal surveys)

This study aims to complement Nedbank's three-year strategic recovery plan by analysing Nedbank from a *systems* perspective. Each business cluster, post re-structure and re-organisation, developed their own strategies to achieve organisational goals. The process to develop strategy plans followed a reductionist approach, which revealed fundamental challenges for organisational change in today's knowledge world. The research develops an argument that effective and sustainable change requires a systemic view of strategy, structure, funding, people, processes and culture.

The expectation from Nedbank's management is to direct innovative solutions embedded in business cluster strategy plans with the overriding intention of improving staff morale, reducing costs and increasing the return on equity. The study argues that sustainable and effective innovation in this context requires a change in paradigm where organisations are viewed as living systems (organisms) and as such exhibit properties of living systems as summarised by Keene (2000). *"In the old Newtonian paradigm of seeing the world and organisations in a mechanistic way, fluctuations and disturbances are seen as signs of trouble. We tend to associate control with order. However, what complexity tells us is that disorder plays a key role in the creation of new and higher forms of order. The space of complexity is that state which the system occupies and which lies between order and chaos. It is a state that embraces paradox; a state where both order and chaos exist simultaneously. It is also a state in which maximum creativity and possibility exist for the system to realise and explore"* (Keene, 2000: p2).



As a participant in the system, I was frustrated with the challenges being experienced with regards to the implementation of projects. Similar risks, issues, constraints and challenges were surfacing across different change interventions (projects) that stimulated my interest in understanding organisational change in Nedbank. The context describes the system that is in a particular state of recovery and turnaround of the Bank, and that various change interventions including change management were already being implemented.

To complement and support these interventions, the study was aimed at understanding organisational change focusing on a *holistic paradigm* that is most conducive to the information and knowledge age. The challenges, issues and constraints are assumed to be symptoms of an organisation that operates in the knowledge and information world but manages in the mechanistic paradigm.

These challenges and issues emerged from an ontological and epistemological perspective (which created the worldviews) that defined the conceptual frameworks and research questions to be explored in order to understand organisational change from a holistic paradigm. Worldviews that were extracted from respondents informed the need to explore concepts within the frameworks of systems thinking, complexity theory, dynamic capabilities, organisational learning and knowledge management.

The usefulness of the information reviewed was then reflected upon the applicability of the Nedbank context and the learning derived from the synthesis of the worldviews was documented with the view of creating a deeper understanding of organisational change in the Nedbank system.

## **1.2. The Problem Statement**

The aftermath of restructuring and retrenchment initiatives, resulting from the BOE merger, created an extremely busy and complex environment that is change fatigued and stretched to achieve financial targets for business viability, and at the same time, address

compliance and regulation targets over and above, participating in South Africa's local transformation agenda. Within this complex web of activities, new challenges emerge that identify the need to create cohesion across business clusters in order to achieve business success. The question then arises: How do we most effectively utilise resources to achieve business success and therefore competitive advantage? Resources in this regard refer to employees, funding, systems, processes, strategy and leadership in terms of their utilisation in relation to effective organisational change interventions.

### **1.3. Focus of the Study**

The focus of the study is defined by the research questions that were derived from the synthesis of the research context and problem statement. Hence, the study will focus on developing worldviews on organisational change within the Nedbank context and building the case for introducing a holistic paradigm that is most appropriate for addressing complex situations. The purpose of the study is to discover and understand organisational change and its implications in the knowledge/information world. The context is specific to organisational change in Nedbank, which is metaphorically viewed as an organism with the intention of presenting an alternative perspective to the contemporary paradigm.

According to Machiavelli "*There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success than to take the lead in the introduction of a new order of things*" – Niccolo Machiavelli (<http://www.ndu.edu/ins/>)

Hence, the primary research question focuses on *how managers transform their contemporary thinking to address the challenges of organisational change in the knowledge world*. However, the scope of the research is confined to address, the following supplementary research questions that informs the primary research question:

1. What are the external factors that influence organisational change?
2. How can we use systems thinking to understand the impact of change?

3. What are the implications of understanding organisational change from a metaphorical perspective?
4. How does the interaction of individuals and systems impact on change?
5. What is the significance of patterns in understanding organisational change?
6. How can dynamic capabilities be used as an organising structure for effective change?
7. How can strange attractors influence organisational change?
8. Can organisational learning act as a catalyst for change?
9. What are the implications of knowledge management for organisational change?

These questions were identified with the purpose of developing interventions derived from the worldviews that complement existing interventions and is congruent with addressing challenges of the knowledge world.

#### **1.4. Objectives of the Study**

The objectives of the study can therefore be summarised as:

- Diagnosing the challenges facing organisational change in Nedbank's turnaround phase
- To present the case for identifying the need and requirements for a paradigm shift to address the challenges facing organisational change
- To elicit themes that is useful to stakeholders participating in Nedbank's transformation process
- To identify leverage points for organisational change that develops competitive advantage
- To understand social phenomena in organisations and its implications for structure, strategy, culture, process and learning
- To explore the notion that organisations can be viewed as organisms and discover implications of generalising organic principles in organisations.

### **1.5. Expectations**

Management's expectation of any change intervention within the system should be aligned to achieving shareholder value by achieving targets planned for return on equity and cost to income ratio whilst improving staff morale. My expectation of the research was to deliver a message to transformation stakeholders regarding the challenges and opportunities of change and how we need to organise ourselves to exploit the opportunities of change and effectively address the challenges of change.

### **1.6. Assumptions**

Although the research builds the case that a holistic paradigm is congruent to addressing challenges of organisational change in the knowledge world, it is assumed that the worldviews extracted from respondents are comprehensive and that finer nuances on existing worldviews might emerge from additional conversations. In addition the transformation unit will be a vehicle and channel to further explore new perspectives.

### **1.7. Significance of the Study**

Leadership requires a new paradigm to be effective in the information/knowledge world. The application of systems and complexity theories to the Nedbank case provided a significant contribution in terms of finding the most appropriate ways of practically dealing with complexity, paradox, uncertainty and unintended consequences. The context that describes the complex web of activities presented the need to understand social phenomena and its relation to organisational change thereby providing new insights on how to leverage resources that may present a legacy for effectively achieving the turnaround strategy of the Bank. The significance of this study within the turnaround strategy lies in the identification and development of themes on how we effectively organise ourselves to exploit the opportunities of change and address the challenges presented from change. Drucker asserts that "*In a few hundred years, when the history of*

*our time will be written from a long-term perspective, I think it is very probable that the most important event these historians will see is not technology, it is not the Internet, it is not e-commerce. It is an unprecedented change in the human condition. For the first time—and I mean that literally—substantial and rapidly growing numbers of people have choices. For the first time, they will have to manage themselves...and we are totally unprepared for it.”* (Drucker, noted from the 10<sup>th</sup> Annual Luminary Series; Leadership from the Ground Up: Effectiveness in Changing Times; October 14, 2004).

### **1.8. The Structure of the Dissertation**

The first chapter presents the background and context of the research that introduces the challenges facing organisational change within the context of the case. To elicit themes and extract worldviews on organisational change in Nedbank, annexure A was developed to inform the reader of the synthesis and the development of research questions and outcomes of the research. This illustration was used to determine the results of the research presented in chapter four.

*Chapter two* explores concepts within the overall conceptual framework identified in chapter three to build the case for a holistic management paradigm to address the challenges facing organisational change in the knowledge world. Chapter two explores concepts within the frameworks of systems thinking, knowledge management, complexity theory, dynamic capabilities and organisational learning.

*Chapter three* explains the rationale for adopting a qualitative research design and the overall conceptual framework of the study whilst *Chapter four* describes the development of themes and worldviews and responds to research questions. In order to understand the outcomes of the research, the reader must engage with Chapter three, which highlights the research methodology, process and paradigm adopted to present the outcomes in Chapter four. Chapter three explains the rational for adopting a qualitative research design and the overall conceptual framework of the study.

The dissertation then concludes with *Chapter five*, which highlights the learning from outcomes of the research.

## **CHAPTER 2**

### **THE LITERATURE REVIEW**

The literature review is about a paradigm shift that is required to respond to the challenges of the knowledge world. It reveals the frustrations of management's thoughts, actions, decisions and roles within an interrelated and complex web of activities where unintended consequences emerge from action. The review presents the argument that the contemporary mechanistic management paradigm experiences new challenges for organisational change in the knowledge and information world and introduces the need to evolve to a more holistic paradigm that transforms management's existing role in an attempt to alleviate the challenges of organisational change.

The review is aimed at presenting theoretical findings from various disciplines specifically on management's role as the facilitator of change in organisations.

The review continues to examine factors influencing change and the impact it has on the role of the manager in terms of the environment, the organisation and the individual. It explores the phenomenon of organisational change with the intention of exposing the reader to concepts and insights that challenge the contemporary paradigm to evolve to a holistic systems paradigm.

Hence, this chapter presents organisational change elements of Nedbank's transformation phase by reflecting on theory that is most appropriate for a holistic paradigm. The review explores concepts identified from the outcomes of worldviews (Annexure A) that presents the overall conceptual framework (refer to figure 18 in chapter 3) for the study. Therefore, the review explores concepts such as systems thinking, complexity theory, knowledge management and dynamic capabilities to elicit themes for emergent strategies on organisational change to complement the existing transformation process.

The review is structured into three main sections. The first section explores factors that influence organisational change and how diagnostic techniques from the literature on systems thinking provide a more holistic and deeper understanding of problem situations

instead of mechanistically analysing problem events. The second section focuses on complexity theory to further understand the relational nature of organisational and human systems. The third section explores models from the literature on knowledge management and organisational learning and its implications for facilitating change in the knowledge world.

The theme that is maintained throughout the study is that organisations are about people who inter-relate with each other to achieve organisational goals, and as such exhibit social phenomena that have important implications in defining an organisation's capability to implement change interventions.

Hence, the study builds the case for the requirement of a holistic paradigm by exploring elements within the conceptual framework and therefore, presents the following perspectives on organisational change:

## 2.1 Organisational Change and Systems Thinking

2.1.1. Factors influencing organisational change

2.1.2. The use of systems thinking to understand the impact of change

2.1.3. Understanding organisational change from a metaphorical perspective i.e. viewing organisations as living systems

## 2.2 Complexity Theory

2.2.1. The role and impact of collaboration and interaction of individuals and systems in organisations

2.2.2. Philosophical evidence depicting the significance of patterns and eternal principles that influence change

2.2.3. Dynamic capabilities as an organising structure for effective change

2.2.4. Influencing organisational change through strange attractors

## 2.3 Implications of Facilitating Organisational Change in the Knowledge World

2.3.1. Organisational learning as a catalyst for change

2.3.2. Implications of knowledge management on organisational change.



## **2.1 Organisational Change and Systems Thinking**

### **2.1.1. Factors influencing organisational change**

Mahatma Gandhi stated that “*You must be the change you wish to see in the world*” (Source: The official Mahatma Gandhi archive and reference library, <http://www.mahatma.org.in/quotes>) signifying the proactive transformational characteristics of leadership that is required for times of change. There are many variables that influence organisational change and some of them, which are generated externally, force change internally. These factors include globalisation, information technology, demographic and regulatory change.

Globalisation is one of the contributors to influencing change in organisations. Innovation in digital communication and access to information are leveraging multi-national companies (MNC) to increase their footprint in foreign countries. One example within the context of the case is the impending merger between ABSA and Barclays PLC. Another contribution influencing organisational change is information technology. Innovation in technology facilitates downsizing and automated processes. An example within the context of the case refers to the high infrastructure costs involved in providing banking branches whereas cellular phone technologies are redefining the costs associated with banking. Demographic change is another contributor for influencing internal change. Demographic diversity policies like Employment Equity (EE), Affirmative Action (AA) and Black Economic Empowerment (BEE) are changing the way Banks do business. Regulatory change is another contribution that influences organisational change. Non-compliance to Financial Intelligence and Compliance Act (FICA), Financial Advisory and Intermediate Services (FAIS), and BASEL II policies attract costly penalties and constraints to innovation resources as their capacity is utilised by compliance projects. Hence, change is necessary for survival and the ability of an organisation to leverage from change is seen to be the most competitive.

Change can be classified as a condition and process, planned or unplanned, tactical or strategic, evolutionary or revolutionary. Change is defined as a condition of the environment that is generated externally (Cowings 1999). An example within the context

of the case was the strengthening of the Rand and declining interest rates in South Africa which fundamentally turned Nedbank's strategic opportunities into weaknesses. Nedbank was forced to react and gear their products differently so that a stronger Rand did not negatively impact them. This can be classified as a process change. According to Cowings *"change as a process is what we foster internally in response to changes in the environment. It is the leadership and management actions we take to change the organisation. Therefore, unlike changes in the environment, change as a process is ours to influence"* (Cowings, 1999: p4).

The challenge lies in how leadership chooses to influence in terms of the situation being faced. The paradoxical nature of change classifies change as planned or unplanned. Unplanned change occurs as a reaction to unanticipated events. Planned change maintains the organisation's relevancy that is due directly to the external environmental processes.

According to Cowings (1999), tactical change is change initiated for the short term, and strategic change classifies change that focuses on achieving the organisation's vision. However, Nedbank's case reveals that strategic change is beneficial if it is dynamic in nature. An example within the context of the case was to achieve the Capability Maturity Model Integrated (CMMi) accreditation, which was a strategic initiative to benchmark itself among international competitors as well as improving predictability and repeatability of processes. The intention was to commercialise Nedbank's card processing technology internationally. However, environmental influences forced Nedbank to consolidate offshore business and investments and focus on the core competency of banking and not technology investments, and therefore confined the CMMI initiative. However, one can argue that there is a difference between developing strategic change initiatives and the actual implementation thereof.

The fourth classification according to Cowings (1999) is evolutionary or revolutionary change. The recovery and turnaround change initiative in Nedbank can be classified as evolutionary but trying to achieve a revolutionary impact by fixing what's broken, growing the business and developing a competitive advantage. According to Cowings *"Both evolutionary and revolutionary change can be legitimate strategic choices under*

*the right environmental conditions. Environmental conditions can be defined by velocity, mass and complexity. The velocity of change is the rate change takes place. The mass of change is how widespread it is. And, the complexity of change means that change never occurs in isolation. Each change affects other changes in often unseen, unanticipated or misunderstood ways that lead to unintended second and third order effects” (Cowings, 1999: p5).*

The fourth classification is supported by a holistic paradigm of organisational change that has emerged from the science of complex adaptive systems. Olson & Eoyang (2001) highlight the differences between the traditional model and complex adaptive model of organisational change.

<b>Traditional Model</b>	<b>Complex Adaptive Model</b>
Few variables determine outcomes	Innumerable variables determine outcome
The whole is equal to the sum of the parts (reductionism)	The whole is different from the sum of the parts (holistic)
Direction is determined by design and the power of a few leaders	Direction is determined by emergence and the participation of many people
Individual or system behaviour is knowable, predictable and controllable	Individual or system behaviour is unknowable, unpredictable and uncontrollable
Causality is linear: every effect can be traced to a specific cause.	Causality is mutual: every cause is also an effect and every effect is also a cause
Relationships are directive	Relationships are empowering
All systems are essentially the same	Each system is unique
Efficiency and reliability are measures of value	Responsiveness to the environment is the measure of value
Decisions are based on facts and data	Decisions are based on tensions and patterns
Leaders are experts and authorities	Leaders are facilitators and supporters.

Table 1: Traditional and Complex Adaptive Models of Organizational Change

Source: Olson & Eoyang, 2001: p2

Olson & Eoyang (2001) support the view that Newtonian concepts are appropriate when systems are closed, change is slow, interdependencies are low, certainty is high and variability is low. They agree that today's organisational environment does not depict mechanistic characteristics and further distinguishes assumptions about change between traditional and complex adaptive systems as tabled below:

<b>Traditional Model</b>	<b>Complex Adaptive Model</b>
The practitioner is an independent observer	Anyone who touches or even observes the system influences it in some way
The practitioner will not be transformed significantly by a consulting engagement	The only way to transform is to be transformed
Large transformations require large interventions	Small changes can have enormous effects
Systems seek equilibrium and they are most healthy in that state	Living systems thrive when they are poised far from equilibrium
Change is difficult. It requires a thoughtful and informed design of an intervention	Change is easy. It is perpetual, although not always productive or permanent
The practitioner should be able to predict the outcome of an intervention	Human systems are inherently unpredictable. Observe and adapt
A snapshot description of an organization is helpful	All meaningful patterns emerge over time, not in an instant
Change is toward an intended end. Change models are developmental	Change results from many causes at many different levels of analysis
Levels of analysis require different explanatory models and interventions	Levels are interdependent. Patterns are repeated across various scales
Resistance is expected	Resistance does not exist. It is attraction to an existing pattern
Shared values give a group resilience and ability to respond to changing conditions	A dynamic tension between shared values and differences sets the stage for adaptation

Solutions can be generalized	No two environments are alike. Solutions cannot be generalized
Cooperation is good. Competition is bad	A healthy tension between cooperation and competition is most adaptive
Organizational power and positions are the most powerful differences	Any dimensions of difference can reshape organizational patterns

Table 2: Assumptions of Traditional and Complex Adaptive Models of Organizational Change

Source: Olson & Eoyang, 2001: p137

As a consequence of the impact of environmental forces on internal organisational dynamics, complex adaptive systems provides an opportunity for managers to engage with a paradigm that facilitates thoughts on addressing the challenges facing organisational change highlighted in worldviews 1, 2, 5, 6, 7, 8 and 9 (Refer to Annexure A).

### **2.1.2. The use of systems thinking to understand organisational change**

To associate management with a sense of practicality, using concepts within the framework of systems thinking, the review describes the use of systems archetypes with real situations from the case that presents the requirements for adopting a holistic paradigm.

Understanding the complexity of change requires an analysis of the environment and all participants in the system that the change will impact. Systems thinking is a framework that assists analysts in understanding 'real world problems'. Real world problems as defined by Checkland refer to "*problems of decision in social systems, which arise, which we find ourselves facing, in contrast to the scientists problems in a laboratory which he can define and limit*" (Checkland, 1989: p72).

The knowledge/information world prescribes a mindset that acknowledges and experiences solutions that create other problems and sometimes, problems become

solutions. The inter-relationship and / or co-evolution between an organisation and its environment provide a deeper understanding and new insights of how organisations deal with change.

Von Bertalanffy distinguished between systems that are open or closed to the environment. Checkland's synthesis of Von Bertalanffy's work observed that "*organisms are unlike closed systems in which unchanging components settle in a state of equilibrium; organisms can achieve a steady state which depend upon continuous exchanges with an environment creating or maintaining a high degree of order, where closed systems have no path to travel but that towards increasing disorder (high entropy). In general, in any hierarchy of open systems, maintenance of the hierarchy will entail a set of processes in which there is a communication of information for purposes of regulation or control*" (Checkland, 1989: p83).

Nedbank had evolved into an organisation of silos focusing on its own parts without seeing the true performance of the whole organisation. A silo organisation refers to an organisation where each cluster or department focuses on its own strategy, own resources, own processes and its uniqueness as opposed to focussing on the organisation as a whole. Simple processes have become overly complicated and increased bureaucracy, affected delivery and constrained resources. It is as though Nedbank reached a level of entropy. This describes the consequence of an organisation that operates as a closed system when it is inherently by nature an open system that is influenced by external pressures. Every change initiative in this level of entropy reinforces itself to achieve a higher level of entropy. The outcome of an organisation that operates in silos as in the case of Nedbank can be illustrated and validated by the system archetype referred to as 'The Tragedy of the Commons'.

System archetypes are the extension of the work done by Peter Senge and consists of relationships and combinations of reinforcing and balancing structures. To provide an understanding of some of the key problem situations facing Nedbank and its relevance to developing a case for a paradigm shift, the study explores four system archetypes i.e. Tragedy of the Commons, Fixes that Fail, Limits to Growth and Shifting the Burden.

### 2.1.2.1. Tragedy of the Commons Archetype

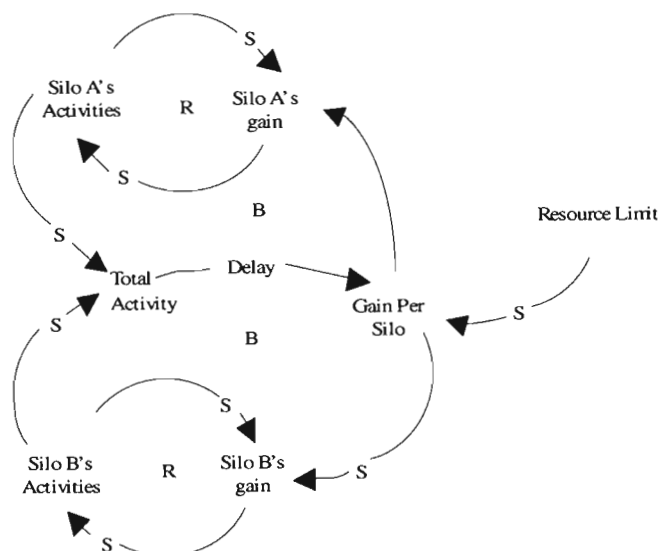


Figure 1: Tragedy of the commons archetype

Adapted from Archetypes: Interaction Structures of the Universe: <http://www.systems-thinking.org/arch/arch.htm>

Although there are many business silos operating in Nedbank, I have only illustrated two silos (A&B), which reinforces the problem situation if all silos were included. Initially, resources contribute to silo A and B's gain. At some point in time, the total activity of reinforcing structures exceeds the capacity of the resource that limits the gain of both reinforcing structures. This describes an example within the context of the case where, the symptoms of silo gain that limits the overall gain, occurred with the Technology silo and Retail silo of Nedbank. The Technology silo was then positioned with significant amount of depreciation to be written off which limits funding for future technology innovation projects. The lack of investment in the Retail silo has also limited product innovation. Thus at some point the increase of reinforcing structures (Business Clusters) will push the entire system to a point of entropy that limits the gain of both silos. This frame positions the manager to think holistically in terms of implementing any change in the system.

### 2.1.2.2. Fixes that fail Archetype

Another example within the context of the case was the retrenchment process that was intended to improve the profitability of the bank. Voluntary retrenchment and early retirement options were given to staff resulting in approximately 3000 employees leaving the Bank's employment. Following this archetype, profitability initially increases however, staff retrenchments decreases staff morale, which decreases productivity and inhibits project delivery. Handovers and rework increases delivery costs (projects in this context is the formalised and structured manner of delivering organisational change interventions for the purposes of strategic recovery).

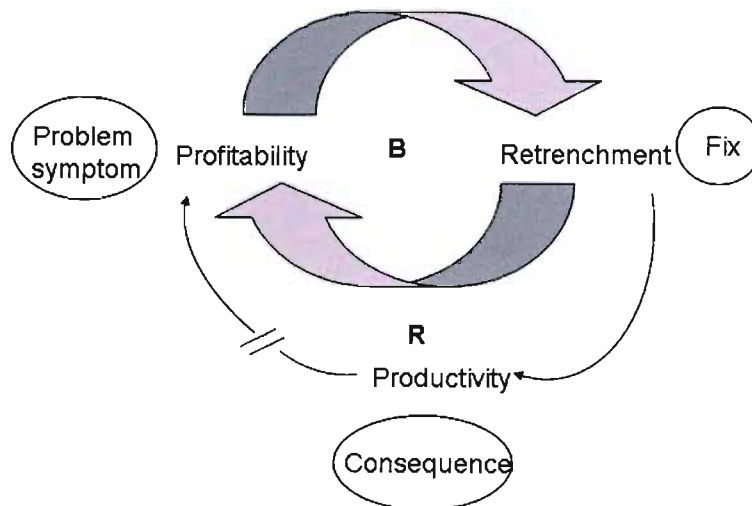


Figure 2: Fixes that fail archetype

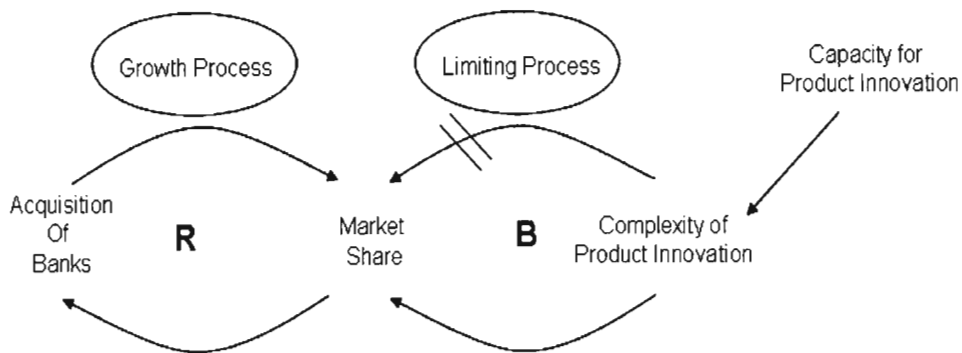
Adapted from the 5th Discipline Fieldbook, Senge et al, 1994: p126

This example refers to 'productivity' as the unintended consequence. Hence, if managers understood this holistic frame of thought then they would have organised themselves to alleviate these consequences.



### 2.1.2.3. Limits to Growth Archetype

Another example within the context of the case was to improve asset and market share growth by acquiring banks such as BOE. However, following this archetype, integration projects required many committed resources, which impacted client service and inhibited product innovation. The limits to growth archetype creates an awareness of growth and limiting processes and identifies the balance between these processes as illustrated below.



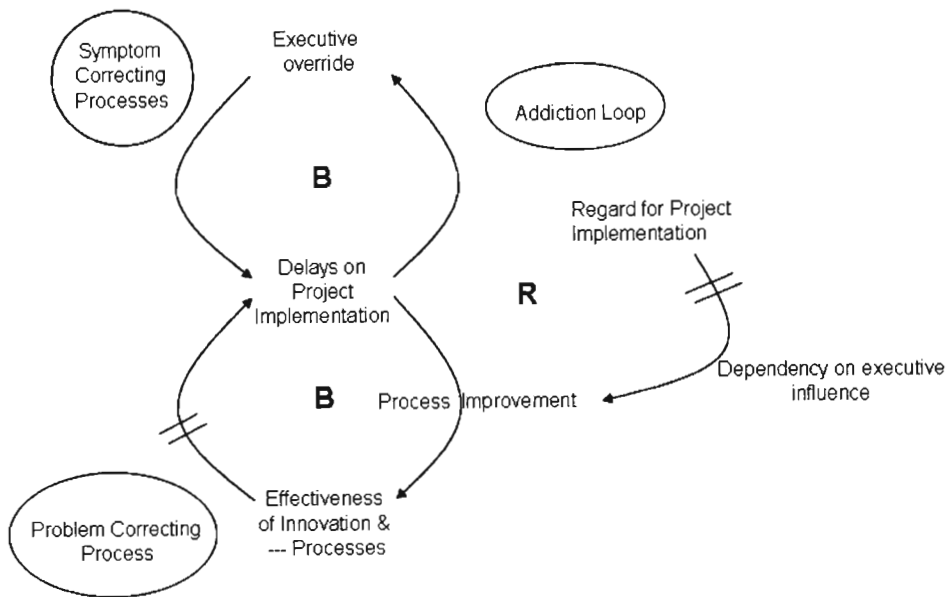
**Figure 3: Limits to Growth Archetype**

Adapted from the 5th Discipline Fieldbook, Senge et al; 1994: p130

Additional acquisitions are not part of the recovery strategy but product innovation is a significant part of the strategy. Hence product innovation is identified as growth processes and operational processes are identified as limiting processes. Hence, this archetype supports the requirement for strategic choice processes to assist managers in facilitating organisational change.

### 2.1.2.4. Shifting the Burden Archetype

Projects are the formal mechanisms that manage, measure, control and co-ordinate the delivery of innovation for the recovery of the bank. According to an internal survey done by independent business consultants, the current innovation and prioritisation processes are too cumbersome and adds complexity to capacity planning and project execution to all stakeholders. Executives are required to use their positional power to influence and expedite bureaucratic processes to deliver projects.



**Figure 4: Shifting the Burden Archetype**

Adapted from the 5th Discipline Fieldbook, Senge et al; 1994: p136

Hence, this frame assists management to ensure facilitation of interventions to move from symptom correcting processes to problem correcting processes.

Archetypes present practical and real issues that challenge management. These challenges reinforce the need to adopt a holistic paradigm when diagnosing and implementing change interventions. The holistic paradigm (as seen in the development of worldviews in Annexure A) presents information in such a structure, that fundamental business challenges emerge that critically impact on organisational change.

Therefore it is beneficial to view organisations holistically when understanding or implementing any change intervention. The objective of the systems movement as described by Checkland is *“the attainment of public knowledge of the kind which science accumulates, by means of a modified scientific method in which a form of holism replaces reductionism”* (Checkland, 1989: p101), which is congruent to expectations described in Chapter 1.

Checkland (1989) classifies systems as natural systems, designed physical systems, designed abstract systems and human activity systems. He describes human activity systems as “clearly observable in the world innumerable sets of human activities more or less consciously ordered in wholes as a result of some underlying purpose or mission” (Checkland, 1989: p111). Checkland lends credence to Drucker’s hypothesis, described in Chapter 1, by stating that “the consequence of self consciousness is that the human being is irreducibly free; he has genuine freedom of choice in selecting his actions” (Checkland, 1989: p116). Hence, holism is an integral factor for consideration when understanding social phenomenon in organisations.

Holism in terms of open systems theory places emphasis on systems in relation to its environment and defines an organisation as inter-related subsystems. Morgan (1997) researched a diagnostic model that identifies configurations of systems that illustrated key patterns and interconnections among sub-systems. This model identified the relations between technical, social, managerial, strategic and environmental supra-systems as illustrated below:

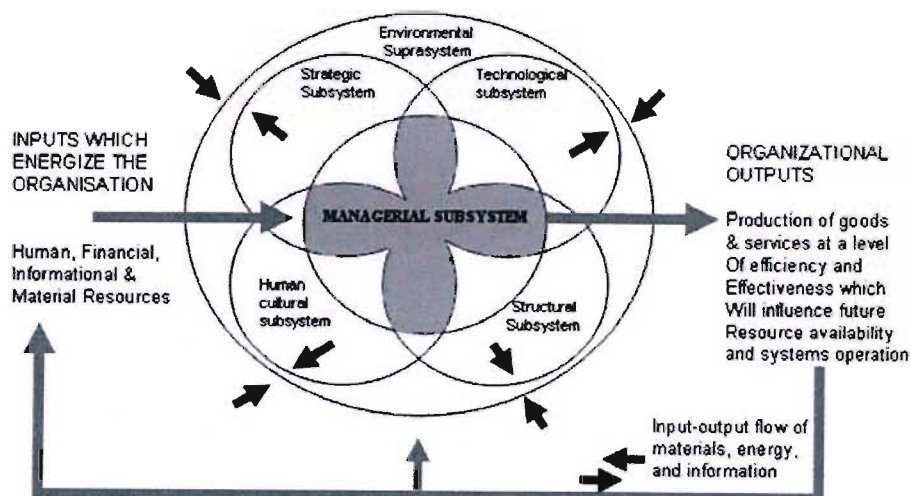


Figure 5: Organisational sub-systems

Source: Morgan, 1997: p43

Figure 5 illustrates generic subsystems that describe the relations between subsystems and variables that influence the functioning of the organisation. It provides management with an opportunity to view an organisation as subsystems within a system, depicting patterns that can be identified, in order to organise itself to meet environmental requirements.

Morgan (1997) advocates that the level of congruence between organisational subsystems and their characteristics influence the organisation’s ability to effectively meet the challenges and opportunities posed by the environment. He proposes the following model for organisational analysis that describes the profile of organisational characteristics and patterns of organisational relations:

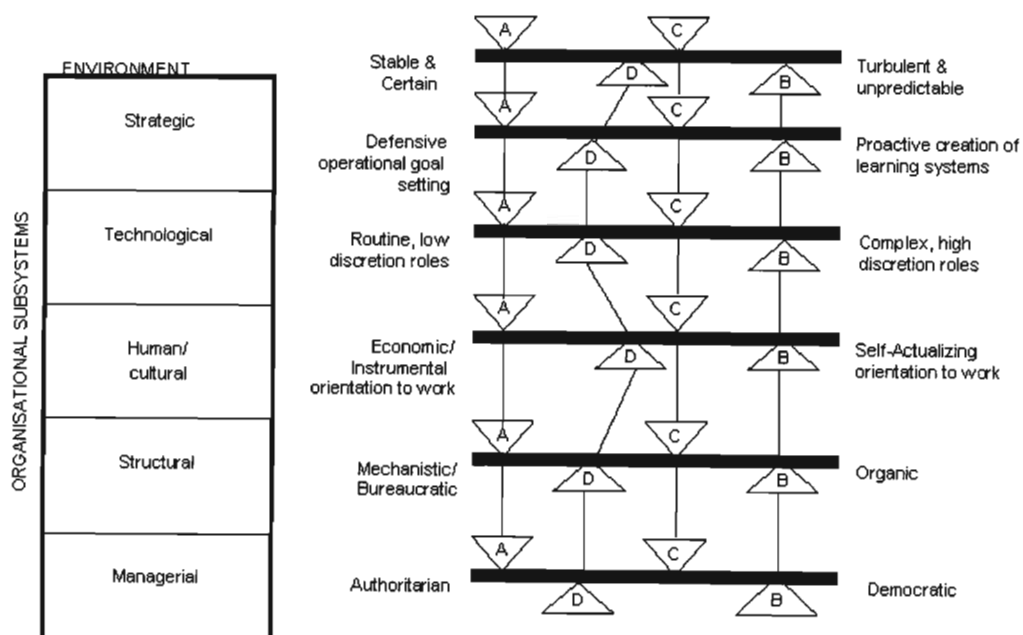


Figure 6: Profile of organizational characteristics

Source: Morgan, 1997: p58

Morgan (1997) cautions that there must be allowance for appropriate differentiation and integration and that the requirements of the parts do not take priority over the whole. His hypothesis refers to the effectiveness of organisations when all sub-systems are in cohesion with the environment.

However, individuals operate within each sub-system and the nature of human activity systems, which display social phenomena, provides an alternative to the classical management theories that thrived in the mechanistic world.

Survival in the knowledge world is a challenge to change agents, as they are required to influence and convince executives that an intervention using the systems paradigm will improve the problem situation. This in itself is a challenge as Senior Management want to find quick solutions to problems. They are placed in situations where they have no choice but to react quickly to events using cause and effect analyses. Lack of information forces management to declare assumptions and make decisions based on these assumptions. Executives measure their management on performance and contribution to the bottom line and in my experience it is very difficult to quantify an improvement of a problem situation directly to the bottom line. In other words, the contemporary approach requires quantitative measures to define a business case for change interventions.

However, Tachi Kiuchi, founding CEO of Mitsubishi Electric America, believes that *“resource efficiency can be boosted by a factor of 4 or more, if businesses can be structured not like machines but like living systems. He suggests principles and practices through which business can become as creative and innovative as the rainforest”* (Shireman, 1999: p454). His assertion supports one of the central themes of viewing organisations as living systems.

Coors Brewing used a systems approach to design a ‘closed loop model’ that sustained the organisation’s performance. They were able to eliminate all waste and emissions and achieve 80% levels of recycling at a fifth of the cost of traditional bottle expenditure. The technology that was developed to achieve this was leveraged against other businesses with additional spin offs where profits are based more on design than on the consumption of resources. Gordon Moore, co-founder of Intel developed this concept using the Microchip where the chip’s value is a function of the design. Based on this concept, Moore’s law suggested that the number of transistors on a microchip will double every two years. Companies like Texaco and Shell are now measuring ROI (Return on Investment) and ROC (Return on Capital) as well as return on materials, energy and knowledge

(Shireman, 1999: pp453-462). Shireman's research argues that the success of these companies can be attributed to a change in mindset by viewing organisations as systems.

Such a paradigm shift concentrates thoughts on viewing the world as a 'supra-system' made up of systems and subsystems that assist us in understanding the interconnected nature of the world. The most commonly seen behaviours have been classified and defined as system archetypes. These archetypes assist in identifying and clarifying forces present in systems and testing mental models about systems (Senge et al, 1994), as seen in the four archetypes described earlier.

Understanding phenomena in organisations requires a holistic paradigm. The systems paradigm offers value when viewing organisations as living systems comprised of reinforcing and balancing loops. It clarifies behaviour in organisations that describes causes as effects and effects as causes.

Hence these themes offer warning signals that clarify possible outcomes of change interventions on a macro level of the organisation. Systems thinking helps to observe patterns, uncover underlying structures, identify points of leverage in the system by identifying key relationships and underlying factors that are reinforcing problem situations.

As Einstein observed *"we cannot solve our problems at the same level of thinking that created them. In other words, the best solutions to an organisation's most pressing challenges are not the ones you see right in front of you. Therefore, look beyond events and patterns to discover what, in the system itself, is causing the problems. Then you will gain insight as to where you should focus your energy and resources to create long lasting positive change in your organisation. When you work on the system the problems work themselves out"* (Dohny, 1999: p19).

The understanding of organizations as sub-systems and the use of systems archetypes provide valuable insight in diagnosing problem situations. The use of tools and methodologies within the systems framework provides management with the opportunity

for developing sustainable solutions for challenges expressed in the worldviews described in Annexure A.

### **2.1.3. Understanding organisational change from a metaphorical perspective**

Viewing organisations from a holistic perspective redefines the competencies of management and their existing role towards strategy, innovation and resource management. The review describes the use of metaphors as a mechanism to open our minds to new ways of thinking and understanding organisational phenomena.

Maturana & Varela (1928) developed a perspective to understand the relationship between systems and their environment, which they define as ‘autopoietic’ systems; characterised by principles of ‘autonomy’, ‘circularity’ and ‘self-reference’. It is an extension of their work on Biology of Cognition which was an “*attempt to show that autopoiesis is necessary and sufficient to characterise the organisation of living systems*” (Maturana & Varela, 1928: p xviii). Morgan asserts that “*the theory of autopoiesis accepts that systems can be recognized as having environments, but insists that relations with any environment are internally determined*” (Morgan, 1998: p216).

The theory of autopoiesis provides insight into understanding organisations as a metaphor. The theory implies that organisations tend to be self-referential in relation to their environments emphasising the significance of their organisational identity. Hence, problem situations can be analysed through analysing the organisation’s identity that organisations try to maintain with their environment. Nedbank’s transformation phase is aimed at improving their brand from a perceived egocentric organisation to a client centric organisation. Hence, the manner in which employees behave, act and perceive their own organisation is significant.

Morgan (1998) identifies the following themes to develop management competency required to generate and channel effective innovation i.e. developing an appropriate organisational culture; which includes cultivating a winning attitude, buying into change, creating a sense of optimism, adding value, encouraging self questioning, encouraging

learning and creativity, brainstorming and creative thinking, embracing variety, shock and surprise, alternatives to hierarchy, improving lateral interactions, creating the right rewards and striking the balance between chaos and control.

Morgan (1998) proposes another interesting view by exploring organisations' needs; placing emphasis on an organisation's environment and supporting the view of organisations as open systems, classifying organisations as different species operating in particular conditions. His summations introduce various views on natural selection. The first view is that organisations, like species, have their own needs (similar to Maslow's Hierarchy of Needs) and adapt to their environment by developing patterns of relations. The second view comes from the proponents of natural selection, that, environment's select organisations and that a wider population ecology exists. The third view criticises the population-ecology view, where organisation theorists believe that the population ecology approach is too deterministic and does not offer a satisfactory explanation of the evolution of organisations. The fourth view is the contingency view that organisations exist in a 'state of tension' with the environment. Biologists' view, that the whole ecosystem evolves and that the evolution can only be understood at a 'level of total ecology' (Morgan, 1998: pp35-71).

These views contribute significantly to management in terms of analysing the organic metaphor in organisations. According to Morgan, *"modern organisation theorists have looked to nature to understand organisational life. The ideas identified provide an excellent illustration of how a metaphor can open our minds to a systemic and novel way of thinking. By exploring the parallels between organisms and organisations in terms of organic functioning, relations with environment, relations between species, and the wider ecology it has been possible to produce different theories and explanations that have very practical implications for organisation and management"* (Morgan, 1997: p66).

The novel way of thinking that Morgan describes implies a paradigm shift and focuses management on understanding the organisation with relation to its environment. It emphasises the attention that management should give to understanding the needs of the organisation. It transforms finite organizational goals to an ongoing learning process for



survival and allows us to view organisations from multiple perspectives that creates a deeper understanding of organisational phenomena.

Metaphors create conditions to use a mixture of theories to improve our understanding of organisational phenomena. It helps in transferring knowledge to source that is better understood (Oliver & Roos, 1998). Their particular view is that a fitness landscape, as defined in complex adaptive system theory, is analogous to a knowledge landscape. They support Kauffman's observation that *"species that fail to move to higher points on the landscapes may be outpaced by competitors that are more successful in doing so and, thus, face extinction through a process of natural selection. Co-evolutionary processes between the organism and others on its fitness landscape can affect the level of smoothness or landscape correlation"* (Oliver & Roos, 1998: p281). This lends credence to one of the central themes that competitive advantage can be achieved through the ability of an organisation to learn faster than its competitors.

Dove's view is that any change requires somebody to learn something and argues that organisational 'agility', defined as the organisation's ability to respond to change appropriately is achieved when organisational competencies are balanced (supports Morgan's Model – Profile of organisational characteristic – Figure 6) particularly the knowledge management and change proficiency competencies. He describes organisational agility as a fundamental necessity for survival (analogous to the organismic model) and that learning is a process that develops knowledge and that any change requires learning. (Dove, 1999: p1).

A possible solution for initiating the paradigm shift can be found in collaborative learning mechanisms such as Communities of Practice (COP). Dove defines COP as informal networks of people that work towards a common practice. These communities overcome organisational barriers that are characterised by formal and hierarchical structures to share their learning (Dove, 1999).

Understanding organisational change from a metaphorical perspective presents management with novel ways of understanding organisational phenomena and therefore assists management with innovative ways to address challenges of organisational change.

## **2.2 Complexity Theory**

### **2.2.1. The role and impact of collaboration and interaction of individuals and systems in organisations**

The review explores organisational change as an emergent feature of a complex system and highlights the significance of identifying patterns and connections through the interaction of systems and individuals.

One of the themes that is pivotal to effective transformation in Nedbank is collaborative leadership influence and communication as a means for regulation, control and order. Complexity theory views order as an emergent property of a system that is in a state of transition between stability and instability (Mittleton-Kelly; 1997).

Mittleton-Kelly's (1997) synthesis of Kauffman, Holland, Prigogine, Senge, Stacey & Goodman's views, and defines complexity elements as '*Connectivity, Far from Equilibrium, Dissipative Structures and the Edge of chaos paradox*'. She describes complexity as a phenomenon that "*arises from the interrelationship, interaction and inter connectivity of elements within a system and between a system and its environment*". She describes complex adaptive systems as "*dynamic systems able to adapt and change within or as part of a changing environment, closely linked with all the other related systems making up an ecosystem. Within such a context, change needs to be seen in terms of co-evolution with all other related systems, rather than as adaptation to a separate and distinct environment*" (Mittleton-Kelly, 1997: p3).

This is one of the challenges to the existing management paradigm i.e. the notion of co-evolution with all systems within a co-evolving social ecosystem in relation to business operations seen as just normal business processes. Mittleton-Kelly (1997) argues that if a

business process is seen as a separate system then strategy will be seen as reactive to the actions of other entities. Hence, her argument supports the analogy of strategy as a co-evolving process that influences and can be influenced by the social ecosystem made up of all related businesses including the external environment i.e. suppliers, shareholders and regulators.

Systems contain subsystems that are continually fluctuating and when they become powerful, due to positive feedback, the system reaches a point of bifurcation and is forced into a far from equilibrium condition. The system may either disintegrate into instability or reach a new level of order called dissipative structures. The direction which the change may take is impossible to determine in advance and requires a higher flow of information to operate in the far from equilibrium condition. Such a condition forces systems to explore other possibilities and create new patterns of relationship and structures that also apply to social systems. *“When an individual in an organisation is pushed either by circumstances or deliberate intervention away from an established pattern of behaviour or when constraints are encountered in reaching a desired goal, then humans are forced to experiment, to explore their space of possibilities and to find alternative ways of attaining a goal or changing the goal altogether, they find new patterns of relationships, different structures and innovative ways of working”* (Mittleton-Kelly, 1997: p5). This presents another paradigm challenge to management as these concepts recommend that working away from equilibrium creates more possibilities for innovation than working towards equilibrium – contradicting the current paradigm of classical economics that is generally accepted as beneficial. The nature of banking and its operations are mission critical to clients and reinforces the need for command, control, planning, measurement, prediction and order. The notion that order emerges from disorder, known as the edge of chaos paradox (Mittleton-Kelly, 1997), the nature of interconnectivity between systems and operating in a condition that is far from equilibrium is seen as revolutionary to organisations particularly in the current Nedbank structure and the nature of transactional based operations.

Mittleton-Kelly’s observation is relevant to the context of this study as it focuses on understanding phenomena within social systems. Her assertion supports Stacey’s (2003)

view that the application of principles or characteristics of complex systems should be applied as an analogy or a metaphor to the social systems. If analogy is the source for creative thinking that improves innovation, then organisations will be more tolerable to accepting analogies.

The literature review will continue on the assumption that it is valuable to make use of analogies for the purposes of eliciting themes that have implications for change interventions in Nedbank.

Ian Beeson & Chris Davis (2000) researched a contrasting view when applying an organic model to organisations. In their analyses, change in the organic model is seen as an adaptive response by the system acting as a whole, maintaining balance in a shifting environment.

Their view of change in a cybernetic model is seen as reactive or proactive adjustments that are focused on maintaining order in a system. They refer to Checkland's Soft Systems approach that recognises the human role in defining change and assert that the Soft Systems Methodology (SSM) focuses on defining changes that are 'systematically desirable and culturally feasible'. They critique this methodology in the sense that the application of a solution or change defined by SSM is a change from an older order to a new one contrary to just an adaptive response. They assert that there is a difference between change in an organic model and change in cybernetic model. Change in an organic model refers to a external elements that are threatening the organism which then changes to respond to these elements in order to survive whereas change in the cybernetic model is seen to be about improving the order within the system and not as a feature within the system. This implies that change can be managed and controlled by individuals within the system. Although they identify contrasting elements between an organism and an organisation, they support the view that the rapid pace of change challenges the contemporary paradigm of stability, command and control.

Beeson & Davis (2000) conceptualises the interdependency and co-evolution of organisational change and individual action. They describe organisational change as an

emergent feature of a system and that any small change have the potential of creating large consequences. They assert that the behaviour of a system is unpredictable and is the result of multiple interventions by actors. Therefore any action has the element of emergence. This challenges the contemporary approach to change in that managers that approach interventions as specific events to specific parts of a system are unaware of the consequences to the system as a whole. Beeson and Davis (2000) support the view that managing change is a continuous process.

An observation from the Nedbank context reveals that the hierarchical characteristics of the organisation adds complexity to the problem situation. The sales and support staff are at the customer interface and have their own perspectives on creating ideas and solutions to meet customer expectations. These ideas are filtered through to product divisions who have their own interests and their perspectives on solutions to meet customer expectations. These expectations are then codified in structured Business Requirements Specifications (BRS) by business analysts. The BRS is then structured in more detail using tools like UML (Unified Methodology Language) into a Detailed Requirements Specification (DRS), which is completed by product analysts who have their own perspectives on the BRS. This specification is then transformed into a Software Requirements Specification (SRS) by systems analysts who have their own perspectives from a software application point of view, which is then transformed into a design specification so that the software application (solution) is built, tested and implemented. Each step of the process moves the solution away from the original need and relies on tools to maintain coherence that does not accommodate multiple perspectives and systems of interest.

Therefore, this study argues a particular view, that for innovation to emerge, organisations should be viewed as living organisms. They should apply the principles that organisations possess for survival in an environment that is continuously changing more rapidly as characterized by the knowledge world. Management can no longer rely on past experiences and linear thinking. The challenge presents itself as if managers need to transform themselves from 'circles to spirals' as illustrated below:

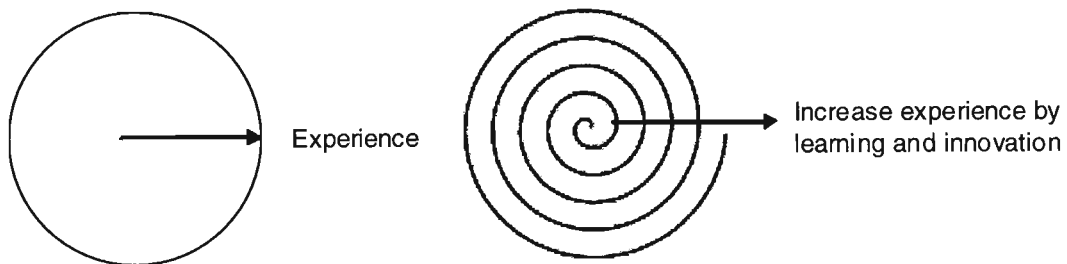


Figure 7: Circle of Experience

If management relies on past experience then innovation will be limited within the circumference of their circle of experience. Management should have the courage to explore possibilities beyond their past experience continuously improving themselves to reach new frontiers of opportunity, thus reinforcing the need for a paradigm shift.

Beck & Cowan (1996) refer to this paradigm shift as second tier thinking on the concept of 'spiral wizardry'. According to Beck & Cowan "*Spiral wizards instinctively roam over vast landscapes seeing patterns and connections others do not notice because their old paradigm, 'first tier' filters do not allow them to. They can move through the spine of the spiral awakening, unblocking, empowering or repairing each of the MEMEs (genetic or cultural codes) of an organization. Such a wizard appreciates chaos and thinks more like a creative designer than a reengineer. The process links functions, people and ideas into new, more natural flows that add precision, flexibility, rapid response, humanity and fun to getting the work done. That is the power of new paradigm, 'second tier' thinking, to constantly survey the whole while tinkering expertly with the parts. Monitoring the full spiral is especially vital during periods of large scale turbulence and change, like right now*" (Beck & Cowan, 1996: p3).

The interaction of individuals and systems in organisations present significant implications for management. It goes beyond collaboration and explores connections and patterns that reveal a deeper understanding of social phenomenon in organisations. It

identifies the need for management to shift their paradigm to explore new experiences to deal with the challenges of organisational change.

### **2.2.2. Philosophical evidence depicting the significance of patterns and eternal principles that influence change**

The challenges of complexity on organisational change can be seen in all worldviews identified in Annexure A. However, the contemporary paradigm requires the presentation of empirical evidence in relation to financial meaning by business cases that contribute to contemporary mindsets. The presentation of philosophical evidence and the use of geometry are presented to challenge the contemporary paradigm by offering 'order' as an alternative to command and control.

*According to Schwandt "Managers and researchers are engaged in a struggle to understand the complexities of organizations in a changing environment. For many, this struggle is perceived as been between order and chaos. Our understanding of organizations is increasing arithmetically. Unfortunately, the complexity of our environment is increasing geometrically!" (Chawla & Renesch, 1995: p305)*

Geometry offers a plausible and alternative understanding to the notion that patterns of order emerges as a result of iterations of simple rules (Mittleton-Kelly, 1997) and the significance of the eternal principle of unity.

*"Geometry is the study of spatial order through the measure and relations of forms. Both our organs of perception and the phenomenal world perceive seem to be best understood as systems of pure pattern or as geometric structures of form and proportion" (Lawlor, 1982: p6).*

According to Lawlor (1982), the tendency to order and 'unity' and the transformation from irrationality to rationality is a natural phenomenon. Take for example the principle of alternation, as described by Lawlor (1982), is expressed geometrically in the ancient symbol of the 'yin yang'. He observes that the 'yin yang' symbol arises from two equal

circles within the larger circle, the diameter of each smaller circle being exactly  $\frac{1}{2}$  that of the larger. The proportion of the diameter to the circumference of any circle is  $\pi$  (pi). At first glance (Figure 8) the symbol suggests that the division of unity is into two equal parts. Such a division results in static equilibrium without any possibility for growth. “*It is the asymmetrical division which creates proportion and thus the progression into form which we call growth*” (Lawlor, 1982: p42). The sum of the circumferences of the 2 inner circles equals the circumferences of the large circle. The process of halving the circles (iteration of simple rules) can be carried on indefinitely and at any point when the sum of the circumferences of the smaller circles is totalled, it will still equal the original larger circle.

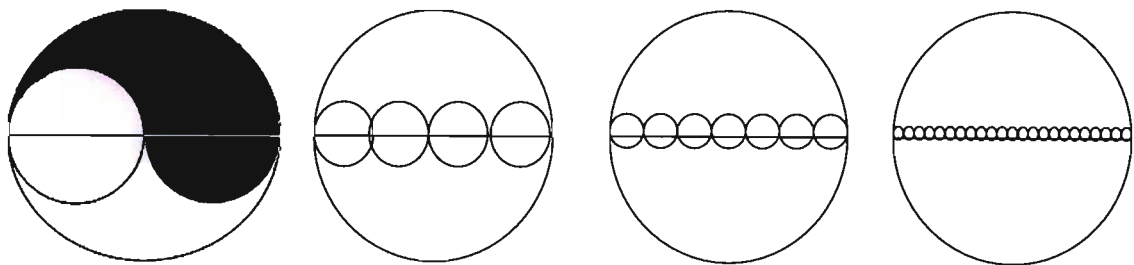


Figure 8: Circles illustrating unity

Source: Lawlor, 1982: p42

This process can be taken to a point where the wavy line and the diameter become indistinguishable from each other, illustrating the paradox of the diameter becoming equal to the circumference of the same circle. This illustrates the tendency to unity signifying the coexistence of irrationality and rationality. The ratio transforms from proportion to unity (i.e. *from* the circumference being in proportion to the diameter  $\pi$  [pi] *to* the circumference equalling the diameter) establishing the paradox of achieving unity, rationality and order from irrationality.



According to Maturana & Varela “*The greatest hindrance in the understanding of the living organization lies in the impossibility of accounting for it by the enumeration of its properties; it must be understood as a ‘unity’. But if the organism is a ‘unity’, in what sense are its component properties of its parts? The organism approach does not answer this question, it merely restates it by insisting that there are elements of organization that subordinate each part to the whole and make the organism a unity*” (Maturana & Varela, 1928: p5).

For the purpose and scope of this study, the research describes this observation as a metaphor in its application to organisations.

Hence, using geometry as an analogy in Euclid’s Theorem: any triangle having a hypotenuse on the diameter of a circle has a  $90^\circ$  angle and; conversely, any  $90^\circ$  triangle inscribed into a semi circle has its hypotenuse coinciding with the circle’s diameter; conversely, any triangle that can be inscribed in a circle with its hypotenuse insisting on the diameter, is always a  $90^\circ$  triangle.

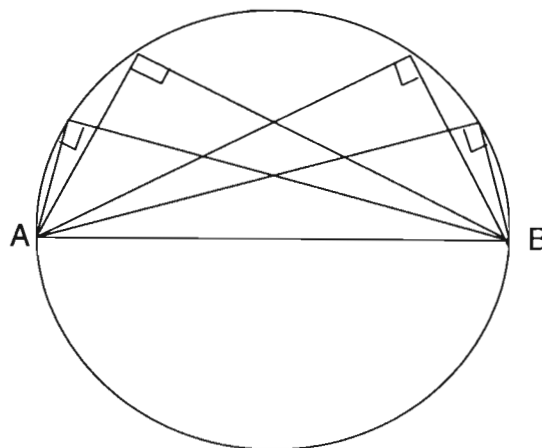


Figure 9: Illustration of Euclid’s Theorem

If curve AB represents the boundary of business with A & B also representing organisational goals and line AB represents organisational values; and if employees are allowed to open their space of possibilities to operate at any random point on the

boundary, then some kind of order will emerge. In Euclid's theorem there will be a 90° angle in every triangle. Hence, the examples and assertions above support the view that geometry can be used to explain the provenance of simple rules that influence the emergence of order and unity (Lawlor, 1982).

The significance of patterns provides an alternative perspective that challenges the contemporary paradigm in terms of understanding complexity and provides management with an alternate perspective to addressing challenges presented in worldviews 1, 2, 5, 6, 7, 8 & 9.

### **2.2.3. Dynamic capabilities as an organising structure for effective change**

To challenge the contemporary paradigm and address worldviews 1, 2, 5, 7 & 9, the review explores the concept of dynamic capabilities, which is congruent to the holistic paradigm.

Eisenhardt & Martin (2000) explore the configuration of resources that develops an organisation's dynamic capability for competitive advantage. They define dynamic capabilities as "*a set of specific and identifiable processes such as product development, strategic decision making and alliancing*". They describe dynamic capabilities as "*idiosyncratic in their details and path dependent in their emergence and resemble the traditional conception of routines that utilizes learning mechanisms to guide the evolution of dynamic capabilities*" (Eisenhardt & Martin, 2000: p1105). They refer to the resource-based view (RBV) as a theoretical framework for understanding and sustaining competitive advantage in firms. They argue that because all firms can duplicate dynamic capabilities, competitive advantage lies in the creation of resource configurations and not in the capabilities themselves. They also distinguish between markets that are moderately dynamic and high-velocity markets because market dynamism varies the patterns and characteristics of dynamic capabilities. "*Dynamic capabilities thus are organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve & die*" (Eisenhardt & Martin, 2000: p1107).

The fundamental principle of resource configuration is pivotal to Nedbank's transformation phase. The need for product innovation, specifically in Retail banking, highlights the level of resource configuration required especially in terms of collaboration among resources. According to Eisenhardt & Martin *"Effective product development processes also involve routines that ensure that concrete and joint experiences among team members, such as working together to fix specific problems or participating in brainstorming sessions occur. Such experiences enhance innovation by breaking down the thought worlds that arise because people with different expertise not only know different things, but know these things differently"* (Eisenhardt & Martin, 2000: p1109).

Further insight into understanding resource configuration and product development is drawn from Bowman & Collier's (2004) diagnostic approach to future resource creation. They analyse contributions from, dynamic capabilities, resource based view theories and configuration theories and propose a prescriptive approach to future resource creation. They argue that in order for resource creation to support organisations to achieve sustainable competitive advantage, resources must simultaneously be valuable, rare, inimitable, and non substitutable, which is known as the VRIN criteria. Based on this criterion, they propose that an output of an RBV, strategy should be a realised resource creation process and not a statement of intent. They recommend that this process be *"unique to the organisation and the following dimensions should be considered i.e. Extant resource stock of the firm; views about the future environment; and insights into past resource creation processes"* (Bowman & Collier, 2004: p4). Causal mapping and systems thinking are tools that are recommended to analyse 'extant resource stock' and 'post resource creation process'. Views on 'the future environment' can be developed through scenario planning processes, however, they advocate *"continuous scanning processes that privilege verbal, informal and anecdotal information from external networks over formalised forecasting processes"* (Bowman & Collier, 2004: p5).

Their argument supports Eisenhardt & Martin's observations for developing resource creation processes that accommodates the effect of the market dynamism on dynamic capabilities, and that future resource creation processes should be congruent with the

anticipated environment, as well as the extant resource configuration and the history and culture of the organisation.

Further insight is drawn from adapting Mintzberg's configurational argument by juxtaposing task complexity with environmental stability. They assert that quadrant 1 involves systematic processes for resource creation and the opportunity exists to enhance centralised productive process that is positioned to exploit stable environments. Quadrant 2 involves intuitive process for resource creation and the opportunity to anticipate emerging markets and exploit centralised entrepreneurial processes. Quadrant 3 involves professional processes for resource creation and the environment positions the organisation to create knowledge resources through decentralised processes. Quadrant 4 involves creative processes for resource creation that is most appropriate for environmental dynamism and task complexity. In this quadrant resources emerge through multidisciplinary teams and learning experiences (Bowman & Collier, 2004: p7).

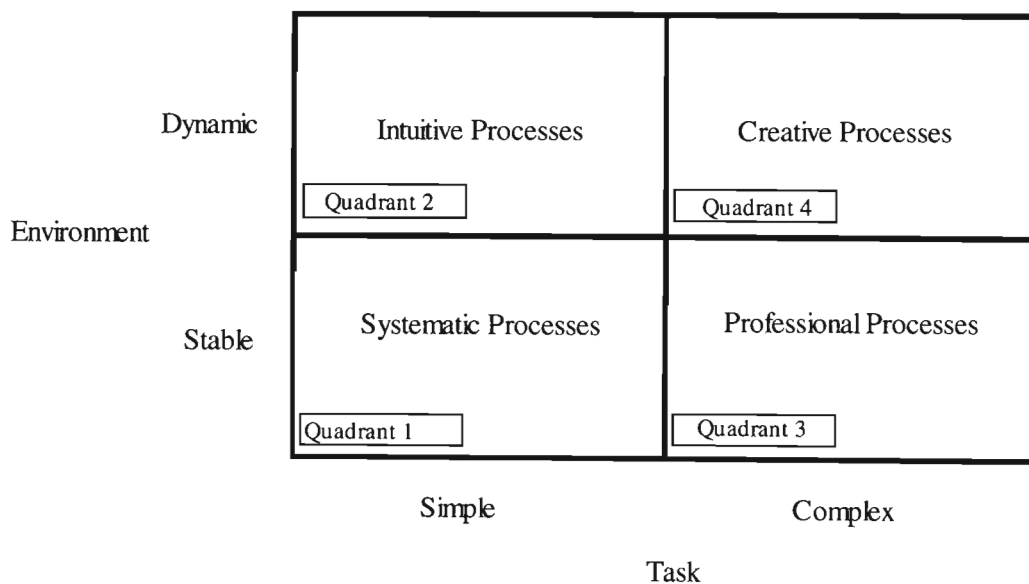


Figure 10: Resource creating processes

Adapted from Bowman & Collier, 2004: p7

This model provides management with an alternate perspective in terms of future resource creation processes to develop financial, operational, technological, knowledge, leadership, learning, strategic and marketing capabilities.

Bowman & Collier (2004) advocate further benefits of following both congruent and incongruent resource creation processes. They refer to the Toyota case where congruent resource creation processes places Toyota in Quadrant 1, however, they attribute Toyota's advantages to their creative culture which lies in quadrant 4. Likewise, 3M's congruent resource creation process, abundance in scientists and engineers, places 3M in quadrant 4. However, Bowman & Collier attribute 3M's success to borrowing resource creation processes from incongruent configurations to produce profitable innovations. (Bowman & Collier, 2004: pp1-10)

Although resource configuration and dynamic capabilities offer valuable insight into developing a resource strategy, there are concerns and limitations. Winter (2002) presents an argument that there are levels of hierarchy in dynamic capabilities i.e. zero level capabilities defined as existing capabilities and first order dynamic capability defined as new product development; and that it is more cost effective to invest in 'ad hoc problem solving' for change rather than sustaining and developing dynamic capabilities to manage change. "*Ad hoc problem solving is always a substitute for dynamic capabilities and may be economically superior*" (Winter, 2002: p7).

McGuinness and Morgan go further to describe the dynamic capability approach as '*outcome orientated*', '*prescriptive*' and its view of strategic change is '*pretentious and misconceived*' (McGuinness & Morgan, 2000: pp209-220). Their alternative to the dynamic capabilities approach, which is congruent with the central theme of this study, is the value of new metaphors offered by science to understand phenomenon, revolution and evolution of social systems in organisations. Their alternative is described as '*complex science and unpretentious management*' and is summarised as follows:

*"The science of complexity studies the dynamics of systems and sub systems whose elements interact in non linear ways. Non-linear interaction implies that a system can change in unforeseen ways and display apparently chaotic patterns even when it is driven*

*by only a few latent rules, each one of which is individually simple. The revolutionary insight from the science of complexity is the idea of emergence that one can expect order to emerge in such systems, though not in a form that can be predicted in any detail” (McGuinness & Morgan, 2000: p216 ).*

Based on Complexity Science, they describe the role of managers in a strategy change process as a ‘*scene-setter*’ and not as a ‘*scriptwriter*’. McGuinness & Morgan (2000) propose that managers should concern themselves with the management of the latent rules of the organisation and the outcome of these rules should be left to emerge. This supports the analogy, described under the section on philosophical evidence, based on Euclid’s theorem. “*In strategy applications of complex science, management is presumed to have an important and influential role to play in designing the rules from which organisational behaviour is socially constructed” (McGuinness & Morgan, 2000: p217). They support Hamel’s five preconditions that management should put in place so that the content of innovative strategies is left to emerge. These preconditions are summarised as follows:*

<b>Precondition</b>	<b>Role of management</b>
New Views	Seek and welcome a wide diversity of views from internal and external resources
New Conversations	Encourage communication across previously isolated knowledge sets
New Perspectives	Accept new ways of seeing things and exposing themselves to new experiences
New Passions	Foster a sense of shared vision by engaging the emotional commitment of employees
Experimentation	Encourage experimentation that may lead to successful strategy innovation

Table 3: Summary of Preconditions.

Adapted from McGuinness & Morgan, p217

Their view is that managers should focus on rules that underpin the organisation. They refer to strategic change as a process of formulating new rules and embedding them by creating far from equilibrium conditions in the organisation. The manager's role must then be focused on managing the process of determining which set of rules dominate to achieve the best results (McGuinness & Morgan, 2000).

The concepts from the theory of dynamic capabilities provide opportunities for management to create processes for competitive advantage. Its appropriateness in terms of its nature to co-exist with existing business processes is beneficial for an environment that is change fatigued and addresses worldviews 1, 2, 5, 6, 7, 8 & 9.

#### **2.2.4. Influencing organisational change through 'Strange Attractors'**

The principle of attractors, drawn from complexity theory highlights the significance of the holistic paradigm and contradicts behaviours exhibited by the contemporary paradigm.

Morgan supports the view that organisations consist of multiple systems that inter-relate with each other and in so doing, exhibit patterns of order and chaos. They support Beeson and Davis's view that random disturbances can produce unpredictable consequences creating new and unique patterns of change (e.g. self-organisation) throughout the system. Morgan maintains that order emerges from chaos provided that there is significant degrees of complexity and random disturbances and therefore referring to these elements as resources of change (Morgan, 1998). The question then arises: What attracts elements to self-organise and create patterns of order?

Chaos theorists observed how system behaviours are influenced through attractors. They highlight the work of Edward Lorenz and refer to the Lorenz attractor that exhibits how complex systems combine order and disorder.

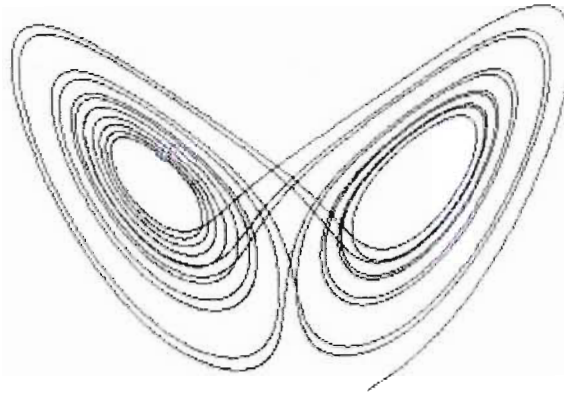


Figure 11: The Lorenz Attractor

Source: Morgan, 1998: p224

They believe that some attractors either pull systems into states of equilibrium or flip them into a completely new configuration as illustrated in figure 11.

*“Chaos theorists have noted that complex systems can fall under different types of attractors. Some pull a system into states of equilibrium or near equilibrium e.g. as a result of negative feedback loops that counteract destabilizing fluctuations. Other attractors have a tendency to flip a system into completely new configurations, as in the case of the Lorenz Attractor”* (Morgan, 1998: p225). Chaos theorists define this ‘flip’ as bifurcation points where systems self organise into unpredictable and different states.

This has significant implications for management. Complexity theory provides new insight to methods of control that are different to contemporary management methods such as planning, monitoring, hierarchy and predictability. Complexity theory proposes that patterns emerge from simple rules and as such, hierarchies can emerge and managers need to facilitate the change process without imposing the traditional control mechanisms. Morgan asserts, *“New order emerges in any complex system that, because of internal and external fluctuations, is pushed into ‘edge of chaos’ situations. Order is natural! It is emergent and free! But most interesting of all, its precise nature can never be planned or predetermined”* (Morgan, 1998: p227).



This is a major challenge to organisations. The theory implies that executives should allow their managers the flexibility to facilitate change interventions rather than controlling them. Reality however, forces management to focus on delivery, performance and measurement which forces management to control rather than facilitate and flow with the process of change. Therefore, Morgan asserts that *“The focus on attractor patterns creates a powerful perspective for the management of stability and management of change, suggesting that transformational change ultimately involves the creation of new contexts that can break the hold of dominant attractor patterns in favour of new ones”* (Morgan, 1998: p227).

Morgan (1998) recommends that managers should analyse the organisation to identify forces locking the organisation into its existing pattern, determine small changes (through systems thinking) that can create large effects by designing the transition from one attractor to another and maintaining simple rules that create possibilities for the emergence of self-organisation. Morgan agrees that the role of managers should focus on creating conditions for self-organisation to emerge. He maintains that if a system is locked in a particular context, then any change intervention will have little impact on the system (Morgan, 1998). In other words, if the context was a hammer, then any change intervention will be perceived as a nail. Morgan believes that new contexts can be generated by new understandings, and new actions, which supports the view of the spiral manager who cannot rely on past experiences but must have the courage to explore new experiences to create new understandings and new actions.

Morgan asserts that if managers develop an understanding of the organisation’s desired future then they will be in a better position to determine pivotal leverage points that can be used to minimise the forces that are reinforcing the current context with the intention of creating the desired future (Morgan, 1998). Hence, combining concepts from systems thinking and complexity theory presents additional opportunities to leverage. *“When we analyse situations as loops rather than lines, we invariably arrive at a rich picture of the system under consideration. This can have its advantages in that the analysis highlights key connections and provides a way of identifying the configuration of positive and*

*negative feedback loops defining a particular context or attractor patterns” (Morgan, 1998: p240).*

Hence, systems maps assist managers and analysts to identify key patterns that define the system’s dynamism and thus identify key leverage points that influences change. It provides insight to understanding attractor patterns and analysing how small changes can have large effects.

Another perspective offered by Morgan (1998) on understanding change is based on Taoist philosophy, as described in the section on philosophical evidence, underpinned by a dialectical view, that internal tensions between opposites have significant impact on social change. Marxian social analysis describes the combination of three principles that form the basis for gradual and revolutionary change. The first principle is ‘unity of opposites’ where self generated change occurs as a result of tension with their opposites. The second principle is ‘negation of negation’ where control actions result in counter-control actions and the third principle refers to the ‘transformation of quantity into quality’. *“When we combine these three dialectical principles, we arrive at a rich and complex picture of the nature of change. Marx’s analysis of society stresses that social arrangements generate inner contradictions that defeat the purposes for which they were set up, leading to a continuing pattern of negation and counter negation. The negation of the negation allows for the progressive development of the system until a limit is reached where its inner contradictions can no longer be contained” (Morgan, 1998: p245).*

Managing these inner contradictions and tensions is essentially about identifying and managing paradox. Morgan (1998) asserts that there is a difference between managing paradox and managing resistance to change. He recommends that management should recognise that both dimensions of contradiction have merit and that management should define new contexts to minimise negative dimensions. *“Paradox is one of the major forces stalling change at all levels of an organisation. It tends to immobilize at both a psychological and action level. Yet, it can be transformed into a major lever of change. For in dissolving or transforming paradox, we change the basic rules of the game” (Morgan, 1998: p251).*

The combination of complexity theory and systems thinking presents management with an opportunity to deal with challenges like paradox as surfaced by worldviews 3, 4, 5, 6, 7, 8 & 9.

## **2.3 Implications of Facilitating Organisational Change in the Knowledge World**

### **2.3.1. Organisational learning as a catalyst for change**

The review explores learning and its relation to organisational change, strategy and innovation and highlights the challenges that knowledge networks and tacit knowledge diffusion face within the contemporary paradigm.

Beesley (2004) also supports the view that an organisation's competitive edge is through knowledge and the ability of an organisation to learn. Her investigations explored emergent patterns within and among individual, group, organisational and inter-organisational levels of learning to optimise the utility of learning. She defines knowledge networks as a social relationship among actors. Hence, knowledge networks contribute to developing our understanding of social phenomena in organisations.

One of the challenges facing the development of knowledge networks is the diffusion of tacit knowledge in organisations. Haldin-Herrgard's (2000) investigation revealed that perception, time, language, value and distance are related to the challenge of tacit knowledge diffusion. The difficulty in diffusing tacit knowledge lies on how successfully you articulate tacit knowledge to connect with explicit knowledge. Perception and language contribute to the creation of an individual's mental model and therefore takes time to accept and internalise new knowledge.

An interesting alternative to mitigate such challenges of tacit knowledge diffusion is offered by Selamat & Choudrie (2004). They use the concept of 'meta-abilities' as a framework for the diffusion of tacit knowledge. *"Meta-abilities are grounded in the view that an individuals effective performance is inextricably linked to his or her psychological*

*development or maturity. Meta-abilities are those personal, acquired abilities that underpin and determine how and when knowledge will be practiced within the organisation*" (Selamat & Choudrie, 2004: p3). They describe the four main meta-abilities as 'cognitive skills', that develops organisational members' abilities to improve their understanding of situations and resolve problems, 'self knowledge', that develops organisational members' ability to understand their own behaviour and make better judgements through viewing one's self through another's perspective; 'emotional resilience', that develops organisational members' ability to direct (concentrate) their energies and 'manage their challenges healthily'; and 'personal drive', that develops organisational members' ability to network with others, take responsibility and risks and achieve goals (Selamat & Choudrie, 2004: p3).

Dawson (2000) views strategy as the relationship between the organisation and its environment and proposes a framework similar to Beesley's (2004) levels of learning. He argues that effective knowledge processes depends on an organisation's knowledge capabilities that he associates with an organisation's strategic capabilities. He proposes that knowledge capabilities are dynamic in nature and the development of such capability must be addressed and developed on an ongoing basis, primarily focused on individual technology, organisational technology, individual skills and behaviours and organisational skills and behaviours (Dawson, 2000: pp320-327).

Harkema (2003) further summarises various perspectives on learning and its relation to change and innovation. His research categorises learning into three streams of thought viz. individualist, structuralist and an interactive perspective; where the individualist perspective propose that individuals are the major source of change in organisations and the structuralist perspective proposes that innovation is determined by organisational characteristics. The interactive perspective proposes that the process of innovation must be understood by analysing the interrelationship between the individual, collective action and organisation structure. However, Harkema asserts that to "*view learning as a process in which knowledge is constructed through interaction and that complex adaptive systems theory may provide insights that help create learning environments. Agents are decision-making units in an innovation project, and as such, they determine how the process will*

*evolve. The way agents interact and the strategies they pursue, lead to non linear, dynamic behaviour, emergence and self organisation”* (Harkema, 2003: p340).

Harkema’s research was based on a simulation model to establish if and how agents learn with one of the main characteristics of agents being individual knowledge. The results of the simulation are summarised as follows:

- Individual learning is an emergent process that seems to arise through interaction and seems to depend on the characteristics of agents involved
- Collective learning depends on the composition of the team and their characteristics
- An agent can unlearn if motivation and trust declines
- Agents that represent research and development and marketing seem to learn faster
- The degree of control is determined by the degree of trust between Senior Manager and Project Manager
- Learning took place faster when Senior Managers were left out which implied the existence of self-organisation.

(Harkema, 2003: pp344-345)

These results provide interesting insights into individual and group learning. Although the outcome is determined largely by the characteristics of agents, they are relevant to the Nedbank case because the agents were modelled in a hierarchy, which resembles the way projects are organised in Nedbank. Hence, the findings from the simulation have significant implications for management.

Harkema characterises reality as complex, dynamic and non-linear and therefore unpredictable. This perspective supports the view that the manager’s role should be focused on creating environmental conditions conducive to open conversations where rules can be challenged as opposed to an environment that is driven by fear and bureaucratic processes. He prefers that an organisation be referred to as a complex adaptive system (as illustrated in Table 1) rather than the metaphor of an organisation as a machine or factory. This implies that innovation must be seen as a mentality and a

continuous process where teams emerge through a process of interaction. In the same way, the values of trust and integrity should not be imposed; they will emerge through the process of interaction. Trust between and within teams will empower managers to allow structures to emerge and dissolve. Organisational processes should be designed for individual creativity. Knowledge sharing should be the organising structure for decision-making. Therefore organisational learning should be seen as a fundamental force that underpins the innovation process (Harkema, 2003).

This presents one of the major challenges of developing trust among agents in a social system where organisational politics destroy trust. However, the review acknowledges that trust has been identified as a key element that defines the levels of interaction among agents, which has significant implications on individual and organisation learning as well as innovation.

Hence the work environment must be conducive for organisational and individual learning. Engelhardt & Simmons (2002) argue that contemporary knowledge transfer concepts focus on explicit types of knowledge and exclude tacit knowledge. They support the view that complex adaptive systems are similar to learning environments where behaviour is a result of the whole environment and the interaction of individual people. Their research draws on similarities between complex adaptive systems and learning processes that describe self-organising activities and the natural emergence of systems as a model for a new type of learning environment. They propose that *“With the scientific theory of complexity that organisation naturally emerges out of the interactions of individual agents without any top down control then one might think that open learning environments and activities, may at times, lead to or be influenced by self organisation.* (Engelhardt & Simmons, 2002: p4). They refer to the Linux case as an example of self-organisation. Linux was created by Linus Torvalds along with developers from around the world. It is a Unix type operating system and the source code is freely available to everyone. This is also known as ‘open source code’. Developers with common values around the world found a way to work together without hierarchical structures and controls to successfully create the computer operating system. Developers that participated in the creation of Linux now have the knowledge and skill to service

organisations that utilize Linux. This example clearly illustrates that individuals can naturally self-organise in unpredictable ways to create a learning environment that results in innovation.

The challenges of open learning systems are based on the factors that Engelhardt & Simmons (2002) propose to '*free everyday control and formal organisation*' to facilitate self-organisation and a culture of learning. They distinguish that an effective culture of learning includes intangible feelings such as "*an atmosphere of continuous evolution of people, groups and ideas, rather than a view toward discrete training opportunities; acceptance of and sense for rolling with the driving forces within each person, whether its root is in a competitive spirit (directed internally or externally), personal pride and values, or simply skills and resume building; A spirit of freedom: individual freedom to choose alternative paths for accomplishing the personal development necessary for individual and business goals, and group freedom empowering the informal organisation to become greater and to contribute in new ways*" (Engelhardt & Simmons, 2002: p7). Hence Engelhardt & Simmons support the view that an open learning environment can lead to innovation and strategic flexibility.

Organisational learning is a critical component for the case because it is identified in every worldview described in Annexure A. Concepts such as knowledge networks, tacit knowledge diffusion and its relation to organisational change is congruent with the holistic paradigm and provides management with fundamental processes for the facilitation of organisational change.

### **2.3.2. Implications of knowledge management on organisational change**

The review presents organisational learning and organisational performance within the framework of knowledge management and explores how learning can be a competitive advantage. It highlights how organisational culture can be a barrier to organisational change and presents various models that are congruent to the holistic paradigm.

Shukla (1997) refers to the evolutionary example of humans and dinosaurs and relates this to the rate and complexity of change that similarly faces organisations. He describes how human beings, in contrast to dinosaurs, survived through various climatic changes due to their ability to learn and to leverage on the learned knowledge. He summarises this evolutionary anecdote in a formula as " $L \geq C$ . *It is a fundamental law of ecology that for any organism to survive, its rate of learning must be equal to or greater than the rate of change in its environment*" (Shukla, 1997: p56).

Shukla (1997) asserts that to be effective in an environment, which is characterised by turbulence and discontinuous change, organisations need to develop capabilities to deal with the environment, continuously seek new alignments by learning, and learning how to learn. He acknowledges that organisational learning is more than the sum of individual learning of its members. "*A firm is an embodiment of knowledge: it can learn, remember, and know things that none of the individuals and teams within it know; complex skills and knowledge are embedded in the minds of its members and in the formal and informal social relationships that orchestrate their efforts; an organisation learns through countless, small, daily endeavours in which sales representatives learn about customers, supervisors learn about suppliers; and through endless adjustments to the routines by which all of them co-ordinate behaviour and judgements with each other*" (Shukla, 1997: p64).



Shukla proposes that learning helps any system to survive and grow as illustrated in the figure below:

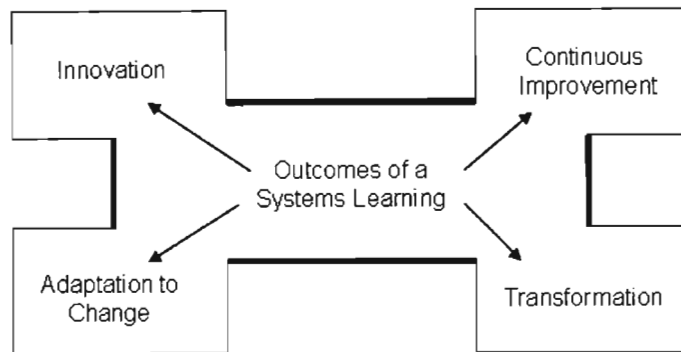


Figure 12: Outcomes of learning

Source: Shukla, 1997: p65

Figure 12 represents the four outcomes of systems learning. It affirms that learning helps a system to adapt to changing environmental influences, enables innovation in products, services, practices and strategy, builds capabilities for continuous improvement and creates conditions that facilitate transformation.

Shukla's learning capabilities model and Schwandt's learning sub-systems, provide insight on similarity of models, and implications for practically exploring organisational learning models.

Shukla's learning capability model focuses on:

- Scanning capabilities that maintain the information flow so that internal and external realities can be validated
- Capabilities for self reflection and problem solving that enable the organization to interpret new information and redefine existing business knowledge
- Capabilities to disseminate and share information that enables the organisation for collective learning
- Capabilities to 'act and experiment' to learn by doing.

(Shukla, 1997).

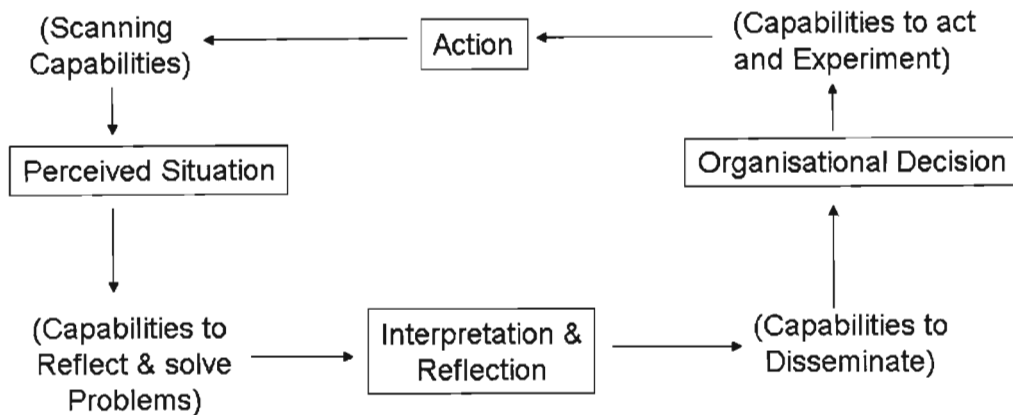


Figure 13: Shukla's learning capability model

Source: Shukla, 1997: p85

Complimentary to Shukla's learning model, Schwandt & Marquandt (1999) propose that learning and performance should be understood as patterns of social change. He makes reference to Parson's social action systems theory that emphasises the relationship between 'focus' and 'purpose' as described below:

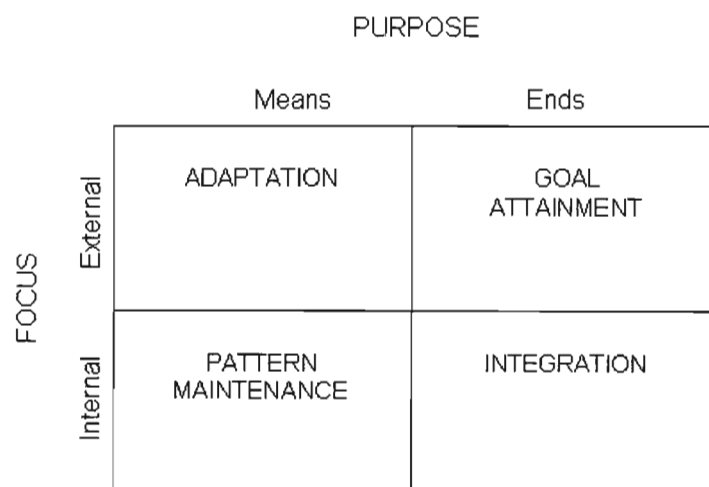


Figure 14: Parson's four functional pre-requisites

Source: Gorelick et al, p29

Schwandt (1999) further developed Parson's four functional model to include what he refers to as '*learning subsystems*' that are independent. The environmental interface subsystem functions as a system of interdependent activities that focuses on information that enters and exits the organisational learning system. This subsystem typically responds to internal and external signals and often the activities take the form of research, surveys and benchmarking.

The '*action reflection*' subsystem creates valued knowledge from new actions and new information. This subsystem focuses on reflecting on processes used in the action, the results of the action and the underlying premises of the action. The activities of this subsystem can be described as critical thinking, research evaluations, experimentation and problem solving.

The '*dissemination and diffusion*' subsystem transfers information and knowledge throughout the organisation where dissemination is characterised by formal procedures and policies and diffusion is characterised by informal processes and communication.

The '*meaning and memory*' subsystem is based on the premise that learning is dependent on shared understanding and thus focuses on creating, storing and maintaining processes for meaning and sense making. It includes processes that reflect values, beliefs and knowledge (Gorelick et al, 2004: p30).

The relationship of these four subsystems is described as the media of interchange for the learning subsystems and is illustrated by Schwandt as follows:

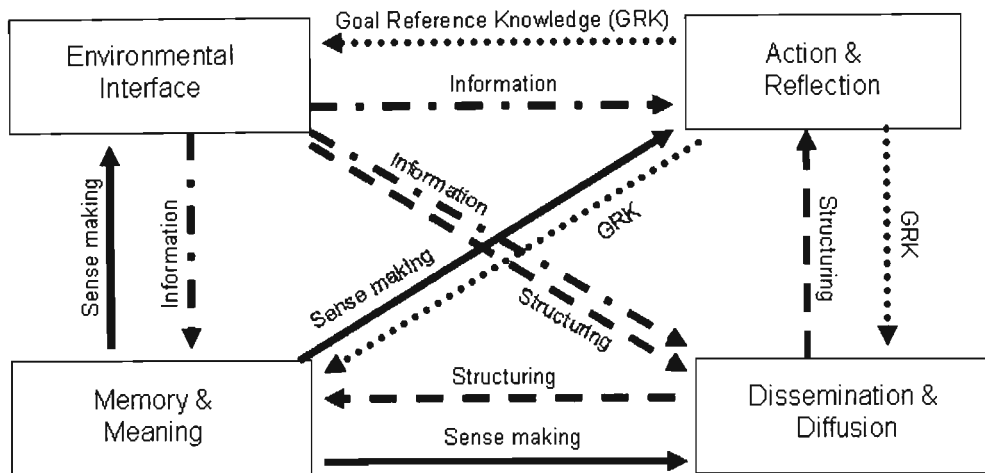


Figure 15: Media of interchange in Schwandt's learning subsystems

Source: Gorelick et al, 2004: p34

These interchange mechanisms are processes and procedures that produce formal and informal networks and communities and thus can be used as variables or levers to produce performance and learning at the organisational level, individual level and group level. These mechanisms include as an output of the environmental interface subsystem 'access to raw information' from the external environment. As an output of the action reflection subsystem, 'goal referenced knowledge' is created which contributes to the organisational ability to change. As an output of the dissemination and diffusion subsystem, 'structuring' is developed to allow knowledge to move within the learning system. As an output of the meaning and memory subsystem 'sense making' functions are developed to create and maintain the organisations culture (Gorelick et al, 2004).

Schwandt & Marquardt (1999) further proposes a model, which he refers to as the organisational learning systems model (OLSM) *"that is used to analyse performance and learning in relation to organisational and knowledge strategies. The organisational learning systems and model makes the assumption that organisations are dynamic social entities that exist within a complex environment, and combine the two interdependent subsystems: performance and learning as illustrated below"* (Gorelick et al, 2004: p34).

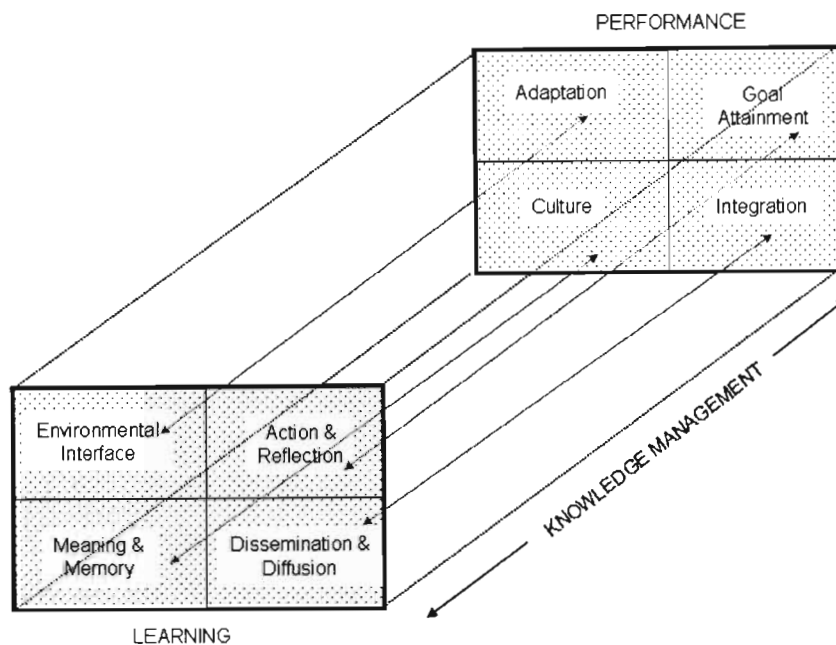


Figure 16: Organisational learning systems model

Source: Gorelick et al, 2004: p35

Schwandt's OLSM is based on sociological paradigms associated with social action systems. The significance of this model in terms of this study is that it offers an alternative perspective on how organisations can identify and leverage from patterns that already exist in the organisational system. The elements that make up the media of interchange offers new insight to identifying patterns and variables as a contributor for organisational learning and organisational performance. Central to this is the knowledge management framework that underpins the OLSM (performance through learning).

Gorelick et al (2004) assert that the integration of people, process and technology within the organisational culture, forms the foundation of the knowledge management framework as illustrated below:

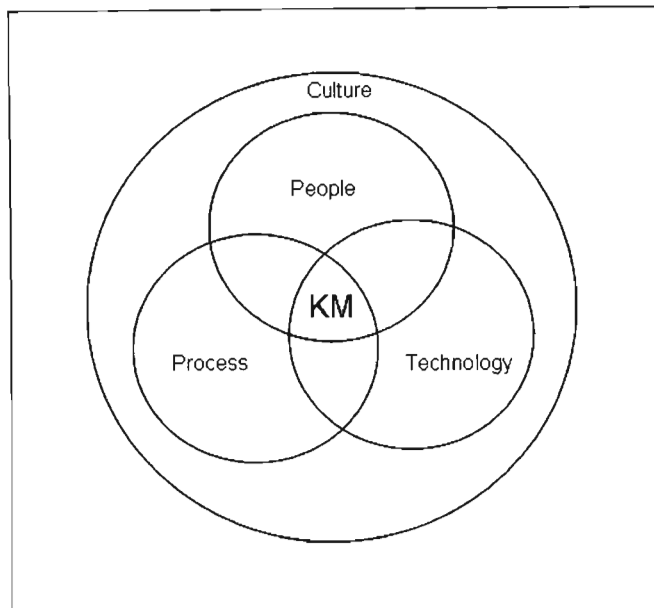


Figure 17: The Knowledge Management Framework

Source: Gorelick et al, 2004: p36

Gorelick et al (2004) support the view that Schwandt's OLSM model can be used to understand organisational, individual and group learning as a social system in a dynamic and changing environment. They acknowledge that the ability to learn at different levels is a competitive advantage and hence propose that learning should be an integral component of every activity or process. The knowledge management framework is designed and should be applied in such a way that knowledge management techniques and tools like the media of interchange increase performance through learning thereby creating a learning culture.

However, Gorelick et al advocate that organisations require a cultural transition in the way knowledge is perceived in the organisation and that successful implementation of knowledge management is dependent on whether the organisational culture is aligned with the values of knowledge sharing. *“Part of the challenge in implementing knowledge management may be to change the culture. Paradoxically, knowledge management itself may be one of the main tools for changing a culture. Knowledge management is by nature reflective because of the focus on learning and performance improvement. It can also*

*lead to cultural improvements. If culture is a barrier to performance improvement, then knowledge management efforts will inevitably raise the issue of necessary cultural changes” (Gorelick et al, 2004: p51).*

This study has identified that culture is a pivotal factor for consideration as it influences the organisation’s ability to change. Gorelick et al (2004) advocate that an effective knowledge management system requires an organisation with a knowledge aware culture. The challenge for leadership is to identify cultural barriers to performance improvement through knowledge management. Common cultural barriers are summarised as follows:

<b>Cultural barrier</b>	<b>Characteristics</b>	<b>Recommendations</b>
1. Knowledge is power	Tacit knowledge resides with a selected few experts and internal competition is prevalent.	Create the realisation that knowledge sharing delivers greater power when competing against competitors.
2. Drive to innovate	Company cultures that are built strongly around the principle of innovation and creativity that leads to reinvention and rediscovery.	Exploit reuse of knowledge.
3. Individual work bias	Structures and cultures that develop and entrench and maintain individual objectives and rewards.	Develop a culture of collaboration and cooperation and rewards for collective performance.
4. Local focus	Silo based focus on own business unit that tend to focus on	Develop measures to transform from a local focus to a network focus.

Cultural barrier	Characteristics	Recommendations
	efficiencies that may limit effectiveness of the entire organisation.	
5. "It won't work here"	Employee disbelief that knowledge can be managed in their own context	Showcasing success that reinforces the mind set "it does work"
6. "Not invented here"	People that lack familiarity with people that offer knowledge generally do not trust the knowledge they offer and prefer to create their own solutions.	Build relationships and promote solutions based on community/group knowledge rather than local knowledge.
7. "Making mistakes is wrong"	Entrenched culture of blame and protectiveness over negative issues on projects that reflect managers as failures	Develop measures to transform failure into learning and display management's support for open and honest knowledge sharing.
8. Information overload	Misconception that knowledge management will add to existing information and communication overload.	Reassurance that knowledge management is about leveraging existing information and knowledge towards improving organisational performance.
9. "No time to share"	Capacity and prioritisation planning	Exploit events where knowledge sharing



Cultural barrier	Characteristics	Recommendations
	<p>focuses on projects and activities that must be performed rarely</p> <p>includes knowledge sharing and therefore knowledge sharing is not part of the execution process</p>	<p>reduces timelines for executing projects and activities.</p>
10. Not paid to share	<p>Knowledge management is viewed as an alternative and an add-on to the management job.</p>	<p>Knowledge management must be embedded in all other management processes.</p>

Table 4: Cultural barriers

Source: Gorelick et al, 2004: pp53-55

The knowledge management framework covers a wide range of issues in terms of process, people and technology within the constraints and opportunities of organisational culture. The review focused on learning within the knowledge management framework and its relation to organisational change.

## **2.4. Summary**

The review covered various concepts within the frameworks of systems thinking, complexity theory, knowledge management and dynamic capabilities with the intention of understanding the need for a paradigm shift from the contemporary mind-set to a holistic paradigm that informs the recommendations for the challenges presented in the worldviews described in Annexure A.

As an outcome of the development and analysis of worldviews, the selection of models and tools to diagnose and implement organisational change interventions become a strategic choice that is informed by the review.

Sutherland & Iles (2002: p23) provide a framework that identifies various models and tools that address key questions when embarking on change interventions (refer to chapter 5). This framework is intended to assist organisational change developers and designers to navigate and select models and tools that are most appropriate and relevant to their context. The synthesis of what is most relevant and appropriate is based on the paradigm that is most appropriate to face the challenges of the knowledge world as presented by the literature review.

The central theme, that organisations are developed on the basis of people and therefore can be understood as a socially constructed phenomenon, where metaphors offered by science is used to understand the phenomenon, supports the need for management to adopt a holistic paradigm to address the challenges of the knowledge world.

## **Chapter 3**

### **The Research Design**

This chapter explains the rationale and reasons for adopting a qualitative research methodology highlighting congruence with the research paradigm. The study took the form of a case study analysing multiple worldviews of the problem situation. The research design was based on the content and context thereby highlighting the features of qualitative research. This chapter also describes the process taken for gathering data, synthesis of the data, interpretation and presentation of the results as well as the process taken to ensure validity and reliability of the research. Hence the aim of this chapter is to present the design of the research so that one has a clear understanding of how the outcomes of the research were derived.

#### **3.1 The Research Methodology**

The research methodology employed is qualitative in nature because the approach concentrates on various factors that influence organisational change that is underpinned by constructs of social phenomena in organisations. The research took the form of a single case study that is classified by Crabtree and Miller (1999) as an ‘*intrinsic*’ case study because the results of the study was used for the case. According to Garbers “*qualitative research aims at the development of theories and understanding. The objective of qualitative research is to promote better self-understanding and increase insight into the human condition. In qualitative research the emphasis is on improved understanding of human behaviour and experience*” (Garbers, 1996: p283). Such an improved understanding provides insight to the real problems and challenges facing Nedbank. Hence Crabtree and Miller reinforce the appropriateness of the qualitative method in researching social phenomena and its relation to organisational change. “*The qualitative design is better suited for looking at the interrelationship of variables to understand phenomena within a case*” (Crabtree & Miller, 1999: p8). “*In qualitative case study research, the goal is to achieve exploration, description or explanation of a particular situation*” (Crabtree & Miller, 1999: p258).

The situation under study refers to the Nedbank context under the conditions of its transformation and turnaround phase where strategies have been developed to achieve the turnaround goals. The purpose of this study was focused on providing themes that emerged from a process of enquiry, that supplement and contribute to the existing strategy. Hence, an understanding of the case from a holistic perspective supported the adoption of a qualitative case study. As Mouton asserts *“that the term ‘case study’ indicates the contextual interest of qualitative research: the main objective is not to generalize to a predefined population of similar cases, but to understand the case or cases which are being studied in depth”* (Mouton, 1988: p1).

Such an understanding, also referred to as ‘*verstehen*’, lends credence to the applicability of a qualitative case study approach as highlighted by Gummesson. *“The detailed observations entailed in the case study method enable us to study many different aspects, examine them in relation to each other, view the process within its total environment and also utilizes the researchers capacity for “Verstehen”. Consequently, case study research provides us with a greater opportunity than other available methods to obtain a holistic view of a specific research project”* (Gummesson, 1991: p76).

The literature review formed an integral part of the research process that reflects on multiple and related theories to inform the study by using concepts from systems thinking to understand the impact of change. The interpretation formed perspectives that constructed a description of reality thereby identifying and maintaining qualitative assumptions about the case. Flick aptly asserts that perspectives are the social construction of reality. *“Theories are versions of the world (theories understood here as assumptions about the subject matter under study). These versions undergo continuous revision, evaluation, construction and reconstruction. According to this, theories are not (right or wrong) representations of given facts, but versions or perspectives through which the world is seen. By the formulation of a version and by the perspective on the world hidden in it, the perception of the world is determined in a way that feeds back into the social construction of this perspective and thus the world around us. Theories as versions of the world thus become preliminary and relative”* (Flick, 1998: p44).

The nature of the inquiry was characterised by certain features that contributed to the relevancy of the qualitative approach to the study.

### **3.1.2 Features of Qualitative Research**

#### **3.1.2.1 Symbolic Interactionism**

The study focuses on obtaining a deeper understanding of various factors influencing change in the Nedbank context and therefore explores the interaction of individuals and systems that produced rich descriptions of the social constructs in Nedbank. Mouton (1998) classifies these interactions as ‘Symbolic Interactions’, which can be used for the analysis of situations. He emphasizes four levels of analysis: “(1) *the ways in which the self renders its environment socially significant, is transformed by such a rendition and construes the environment anew; (2) the way in which social worlds are built up by negotiated perspectives that continually redefine reality; (3) the manner in which social worlds influence one another and engender new constellations of meaning; and (4) the relationship between such worlds and the larger, overarching symbolism that lends some coherence to society*” (Mouton, 1988: Pg 7) and hence such a conception of social reality has methodological implications that inform the research process and paradigm.

#### **3.1.2.2. Reflexivity of the researcher**

The analysis of the case included the reflections of the researcher on theory to understand the influences of change within the specified context. Such reflection contributed towards creating a deeper understanding of the case as well as identifying resultant themes. Flick supports this feature of qualitative research and asserts that reflection is part of the interpretation. “*Researchers’ reflections on their actions and observations in the field, their impressions, irritations, feelings and so on become data in their own right, forming part of the interpretation, and are documented in research diaries or content protocols*” (Flick, 1998: p6). However, due to my role as participant and researcher, my own interpretation was suspended during the data gathering process.

### 3.1.2.3 Appropriateness of method

The criterion that was used to select the most appropriate method of study was based on the process of inquiry to understand the variables impacting change. According to Flick *“most phenomena in reality indeed cannot be explained in isolation is a result of complexity of reality and phenomena”*. The method employed considers the contextual conditions and thus *“the object under study is the determining factor for choosing the method. Objects are not reduced to single variables but are studied in their complexity and entirety in their everyday context”* (Flick, 1998: p5). Hence, the qualitative method was most suitable for addressing the challenges presented by multiple worldviews on organisational change.

### 3.1.2.3 Perspectives of participants and their diversity

The interpretation process of the study synthesised subjective perspectives to obtain an understanding of themes that was the result of diverse views. Flick asserts that *“qualitative research takes into account that viewpoints and practices in the field are different because of the different subjective perspectives and social background related to them”* (Flick, 1998: p6). Respondents were allowed to vent and tell their stories, and where necessary, the conversation continued to a deeper level to elicit the underlying assumptions that created the worldviews.

### 3.1.2.4 Variety of approaches and methods

The variety of approaches included observation, exploration, description and explanation.

#### 3.1.2.4.1 Observation

This approach included the observation of people, their conversations at internal meetings as well as observations of practices, processes, structures and strategic decisions. The focus of interest was to grasp a deeper understanding to analyse learning and change within the context of the worldviews. Rules for observation were not defined and were not structured, however, it was based on experiences within the context and familiarisation of organisational life. Strati (2000), aptly describes the situation as relevant to qualitative research. *“The distinctive feature of participant observation is the varying extent to which the researcher is involved in organizational life during his or her period spent in the*

*organization. It may last for months or even years, or only for the interstitial time between interviews with organizational actors and analysis of organization's documents. Forms of participant observation range from detached observation to working in the organization being studied. The aim of participant observation is to comprehend an organization by seeing it as far as possible through the eyes of its members while bearing in mind the essential question of what is to be rather than to see a member of the organization. Immersing oneself in organizational life raises the problems of how to detach oneself from it. And there is also the problem of choosing among the ways to describe it, ranging from a description which replicates the informants' own view of organizational life as faithfully as possible, to a free or fictional account of the organizational understanding from them. Analysis of organizations as social contexts conducted through participant observation is in fact poorly illustrated if it does not call upon the readers capacity for imaginative participant observation, that is, his or her ability to draw on sensory and cognitive faculties to immerse himself or herself in the organizational process that the written, filmed or spoken researcher's text evokes (Strati, 2000: p142).*

#### 3.1.2.4.2 Exploration

The study is exploratory in the sense that it aims to create an understanding of a particular phenomena in organisations and therefore the research methodology includes the review of literature on factors influencing change that is corroborated by organisational outcomes of change depicted in the results of surveys done within the case. The methodology includes the analysis from a systems perspective that aims to promote an understanding of the Nedbank system and its relation to the environment. The value derived from exploration contributed to achieving a more comprehensive understanding of the worldviews on organisational change.

#### 3.1.2.4.3 Description

The study is also descriptive in nature in the sense that the system description is a construction of reality that informs various worldviews on organisational change as well as the conditions and context, that create a deeper understanding of the case and describes the relation between the researcher and the case (participant as observer).

#### 3.1.2.4.4 Explanatory

The study is also explanatory in nature in the sense that emergent themes are used to demonstrate and inform alignment, or lack thereof, on the strategic direction of the organisation. According to Denzin & Lincoln, *“qualitative research is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret phenomena in terms of the meanings people bring to them. Qualitative research involves the studied use and collection of a variety of empirical materials – case study, personal experience, introspective, life story, interview, observational, historical interactional and visual texts – that describe routine and problematic moments and meanings in individual’s lives. Accordingly, qualitative researchers deploy a wide range of interconnected methods, hoping always to get a better fix on the subject matter at hand”* (Denzin & Lincoln, 1998: p3)

#### 3.1.2.5 Diachronic Analysis

The study makes reference to historical events that lead to the turnaround strategy, which also provided a rich description of the system. Strati describes this feature as ‘diachronic analysis’. *“Organizational research is most frequently only synchronic in nature, so that the focus of analysis is on what is currently happening in the organization, while past organizational events are discerned in the artefacts and rituals of organizing. If research is carried out only synchronically it omits the particular history of the organization and the social context around it. As a consequence, what may perhaps be important stages of the organization’s life cycle are ignored, such as its foundation and possible decline. And ignored above all are the phases that the organization scholar can reconstruct from the events so significant for organizational life that they give cadence to the organization’s time-flow and mark out the strategies of organizational actors. Diachronic analysis restores these elements, which are both important for, and distinctive of, the social construction of organizational life. A further feature shared by the empirical research designs employed by organizational researchers is the often lengthy and irksome period of uncertainty that elapses while access to the organizational context is being negotiated. This is a phase as difficult as it is crucial, because the research design may even undergo*



*substantial changes during it. Yet it is a phase of research that is rarely described, and is deliberately taken into account only by action research” (Strati, 2000: pp 135 – 137).*

Hence, this study makes reference to worldviews on organisational change as well as conversations on survey results that was created by contemporary diagnostic paradigm in Nedbank. This therefore implies that a level of diachronic analysis emerged during the research process.

### 3.1.2.6 The Case Study

The conceptual framework for the study can be illustrated as follows:

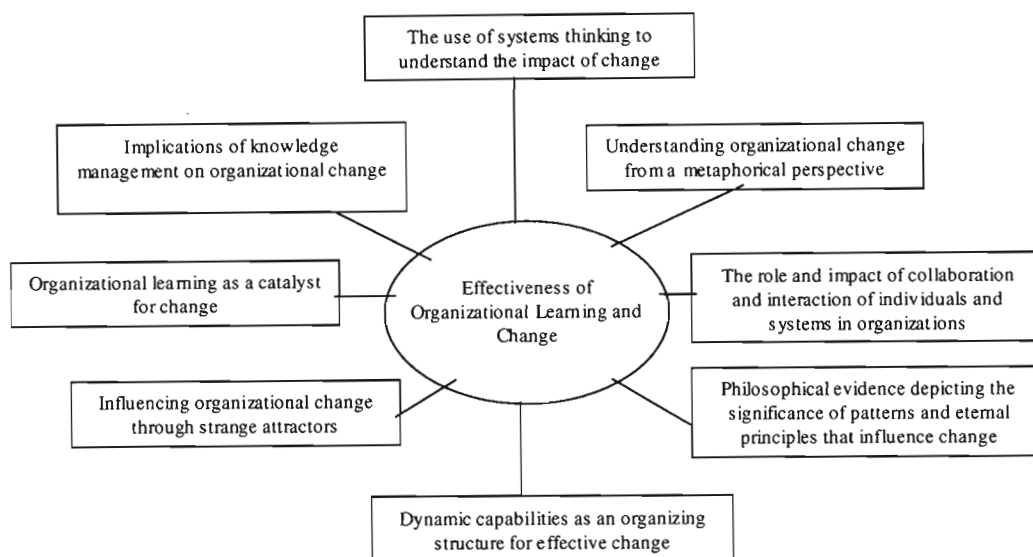


Figure 18: The Conceptual Framework

The worldviews (summarized in Annexure A) identified conceptual frameworks that informed the research questions on organisational change from a holistic paradigm. The nature and purpose of such a study is the purpose of qualitative research as described by Strati. *“Qualitative research seeks to collect the interpretations given by organizational actors to aspects and events of organizational life, emphasizing the nuances that emerge from them. Qualitative research usually makes joint use of participant observation, in-depth interviews and archival information, more occasionally of only interviews, and much more rarely of observation alone. Case study research concentrates on various aspects of a single organizational context, or at any rate on a small number of*

organizational settings, such as a department, an organization in its entirety or an inter-organizational network. It focuses on a situation in which the boundaries between the organizational phenomenon being studied and its context are not immediately clear, and it may use all the various research methods, in the same manner as experimental research. However, unlike in survey research, cases are chosen for theoretical (Glaser and Strauss, 1967) and not for statistical reasons, and therefore not on the basis of statistically correct sampling of a population of organizational settings (Strati, 2000: pp 134 – 135).

### 3.2 The Research Process

The process that emerged from the research was one of using the literature and theory to describe organisational events that impact on organisational change from a holistic perspective. New knowledge has been created through the reflection on theory and Nedbank's transformation phase. The data that was used to reflect upon was sourced through business communications, results from various Nedbank internal surveys, perceptions of management decisions, conversations with various respondents on organisational change that developed the worldviews. The process that emerged can be illustrated as follows:

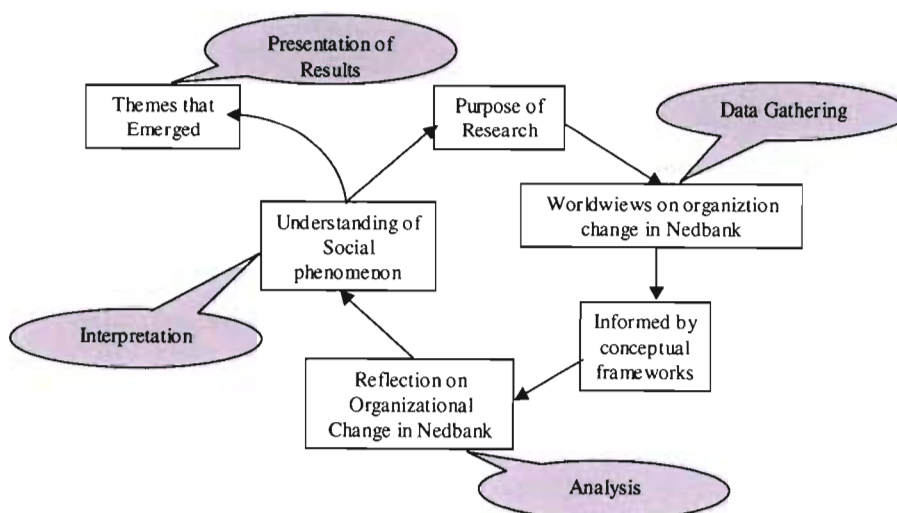


Figure 19: The Research Process

The research process supports Denzin & Lincoln's theoretical observations being epistemology (establishing knowledge on how participants / respondents know the world to be) and ontology – raising questions about the nature of reality and the nature of being that created perspectives on the problem situation known as worldviews. The process and methodology focuses on how we gain knowledge about the world. The constructivist view is that reality is constructed and perspectives of reality generate new knowledge that provides a deeper understanding of reality in a particular context (Denzin & Lincoln, 1998: p185).

### 3.2.1 Data Gathering

Primary data was gathered through conversations with respondents to extract worldviews on organisational change within the context of the case. Secondary data was gathered from multiple sources that took multiple forms. The literature review funnelled the research to obtain relevant data on organisational change. Various sources informed the review of external factors that influence internal organisational factors to change. Internal factors were categorised as systems, processes, structure and strategy as well as the dynamics of individual and system interaction. This formed part of the data gathering process and observations were documented, which is defined by Denzin & Lincoln as 'field texts'. *"Field texts are texts created by participants and researchers to represent aspects of field experience. Some documents eventually become field texts may have been created prior to the enquiry or even during the enquiry but for a different purpose. (survey results). Such documents become field texts when they become relevant to the inquiry"* (Denzin & Lincoln, 1998: p162). Terre-Blanche & Durrheim supports this view and assert that *"qualitative researchers collect data in the form written or spoken language, or in the form of observations that are recorded in language, and analyse the data by identifying and categorising themes"* (Terre-Blanche & Durrheim, 1999: p42).

The primary form of data gathering was conversations with peers. According to Denzin & Lincoln *"conversation entails listening. The listeners' response may constitute a probe into experience that takes the representation of experience far beyond what is possible in an interview. Probing in conversation is done in a situation of mutual trust, listening and*

*caring for the experience described by the other. Once again we see the centrality of relationship among researchers and participants” (Denzin & Lincoln, 1998: p168).*

Unstructured interviews also formed part of the data gathering process. According to Strati *“the interview is a method for the collection of information about organizational life that should be judged according to its potential in the specific organizational and research setting in which it is to be employed. Thus viewed, the distinction between structured, semi-structured, guided, free and in-depth interviews is a classificatory device that fails to do justice to the wide variety of techniques developed by organizational researchers” (Strati, 2000: p142)*

### 3.2.2 Analysis

According to Denzin & Lincoln *“case analysis has two levels of understanding. The first is descriptive. The primitive questions of what is going on and how things are proceeding call for a reasonable accounting of the phenomena observed. The second is an explanation of why, which are always condition and context dependent” (Denzin & Lincoln, 1998: p185).* Reflection on experience, observation and interaction with systems, practices and theoretical concepts formed part of the analysis that provided a deeper understanding of the context, which informed the description and explanation of organisational change.

### 3.2.3 Interpretation and Presentation of Results

According to Crabtree and Miller *“the interpretative process consists of five phases through which one iteratively spirals and shifts throughout the process. The five phases are (a) describing, (b) organizing, (c) connecting, (d) corroborating/legitimizing, (e) representing the account” (Crabtree & Miller, 1999: p130)* This process is similar to that which emerged from the study. Theoretical concepts was analysed to form a description of change events that was organised and connected to the conceptual framework. These events, processes, practice and experiences were corroborated through conversations, interviews and survey results and were presented as themes and recommendations from a holistic paradigm. The synthesis of data that created the worldviews was so insightful that it immediately surfaced themes on strategy, structure, mindset, process and culture.

### **3.3 The Research Paradigm**

The approach that emerged resembles multiple methodologies of qualitative research. Denzin & Lincoln describes this as “*bricolage and the researcher as bricoleur*” (Denzin & Lincoln, 1998: p3). The themes that emerged from the study were pragmatic, self-reflexive, descriptive, explanatory and introspective. Denzin & Lincoln describes and characterises a bricoleur as:

- Adept at performing a large number of tasks using multiple paradigms (interpreting, observing, interviewing, self reflection)
- Represent belief systems that attach the user to a particular world view (holistic paradigm)
- Works between competing and overlapping paradigms (mechanistic vs holistic)
- Understands that research is an interactive process shaped by his or her personal history, biography, gender, social class, ethnicity and those of the people in the setting (contextual experience)
- Tells stories about the worlds they have studied
- Produces bricolage – a complex, dense, reflexive collage like creation that represents the researcher’s images, understandings and interpretations of the world or phenomenon under analysis
- Connects parts to the whole, stressing meaningful relationships that operate in the situations and social worlds studied.

(Denzin & Lincoln, 1998: p4).

Denzin & Lincoln define a paradigm as a “*basic set of beliefs that guide action*” (Denzin & Lincoln, 1998: p185). They describe beliefs as ideologies accepted simply by faith and that there is no way to establish its ultimate truthfulness.

According to Crabtree & Miller “*a paradigm represents a patterned set of assumptions concerning reality (ontology), knowledge of that reality (epistemology) and the particular*

*ways of knowing about that reality (methodology). These assumptions and the ways of knowing are untested givens and determine how one engages and comes to understand the world. Each investigator must decide what assumptions are acceptable and appropriate for the topic of interest and then use methods consistent with the selected paradigm*” (Crabtree & Miller, 1999: p8), which complements Denzin & Lincoln’s theoretical observations described earlier.

Crabtree & Miller’s assertion that “*constructivists claim that truth is the result of perspective*” (Crabtree and Miller, 1999: p10), lends credence to one of the themes that conversations construct perspectives and perspectives construct reality, hence, the correlation between conversation and reality. The theme assumes that to change reality, one can start by changing the conversations.

The research adopted an *interpretative, explorative, reflective, explanatory and descriptive* paradigm to elicit themes that are significant for organisational change by collecting qualitative data through conversations and the reflection of theoretical perspectives on organisational change in Nedbank. The techniques used to interpret qualitative data are based on the systems framework, using systems archetypes as well as complexity perspectives. The themes that emerged created an understanding of social phenomena and its relation to organisational change.

According to Terre-Blanche & Durrheim “*because qualitative research is open ended, positivist researchers believe that qualitative research is always exploratory, leaving the work of accurate description and explanation to more rigorous quantitative research. Interpretative and constructionist researchers, however, contend that qualitative research can be used not only for exploratory purposes, but also to formulate rich descriptions and explanations of human phenomena*” (Terre-Blanche & Durrheim, 1999: p40)

Thietart et al complement this as they assert “*advocates of the multi-paradigm perspective maintain that dialogue between paradigms is not only possible but necessary to advance our understanding of social phenomena*” (Thietart et al, 1999: p29). Hence, this paradigm is congruent to the central theme of the study.

### 3.4 The Research Validity and Reliability

One of the main criticisms of qualitative research is the reliability and validity of subjective views. Therefore the format will include a summary of field texts with the intention of establishing a level of trustworthiness in terms of credibility, dependability, confirmability and reliability.

According to Denzin & Lincoln “*qualitative interpretations are constructed. The researcher first creates a field text consisting of field notes and documents from the field. The writer-as-interpreter moves from this text to a research text: notes and interpretations based on the field text. This text is then recreated as a working interpretive document that contains the writer’s initial attempts to make sense out of what he or she has learned. Finally, the writer produces the public text that comes to the reader. This final tale of the field may assume several forms: confessional, realist, impressionistic, critical, formal, literary, analytic, grounded in theory and so on*” (Denzin & Lincoln, 1998: p29). The analysis and interpretation of worldviews can continuously be tested, reflected upon and amended for comprehensiveness.

The results are presented in a form that is similar to Krippendorff’s framework of content analysis. The framework is illustrated as follows:

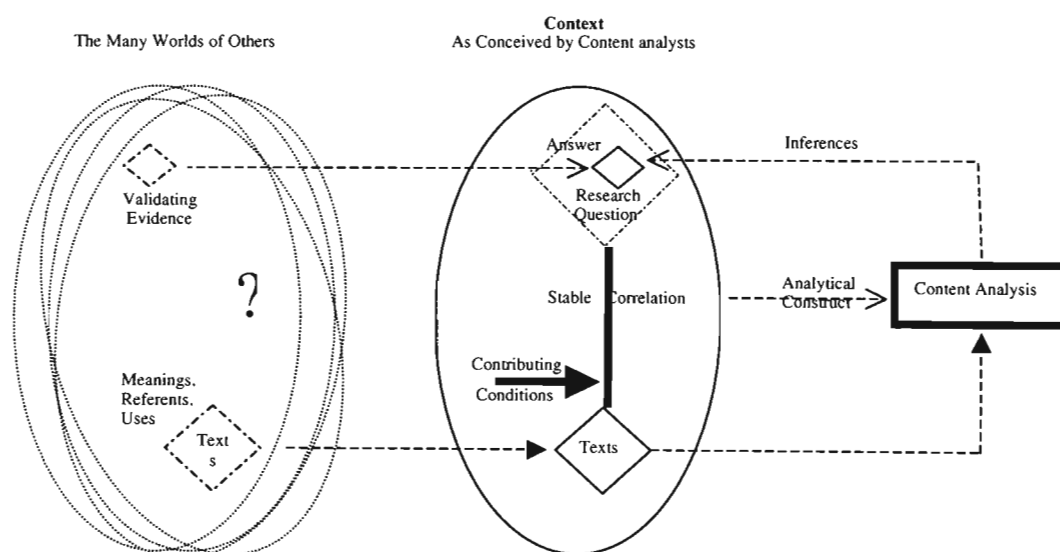


Figure 20: Framework for Content Analysis (Krippendorff, 2003: p30)

Krippendorff refers to text as data that can be analysed and inferences drawn upon for the purposes of answering research questions. Although texts occur in the analyst's world there is acknowledgement from texts in the world of others. Texts inform the analyst with regards to meaning, uses, phenomena and consequences (Krippendorff, 2003).

The answers to research questions are in the form of themes that were derived from related observations from the worlds of others and from inferences. The context refers to a holistic approach to change interventions in Nedbank. Knowledge of the context is categorized as 'stable correlations' and 'contributing conditions'. Analytical constructs are the 'network of correlations' that explain how texts are connected to the possible themes and the 'conditions under which these correlations could change'. Hence, Krippendorff's framework is useful to this study in terms of the connections and correlations between worldviews, conceptual frameworks, research questions and resultant themes.

Kvale (1996) supports this process (creation of texts) in the sense that an interview can be described as a conversation that has purpose. Kvale asserts that the strength of an interview conversation is in the ability to capture various views of a theme that informs the understanding of real issues and controversial human world's of the interviewees. He defines the life world interview *"as an interview whose purpose is to obtain descriptions of the life world of the interviewee with respect to interpreting the meaning of the described phenomenon"* (Kvale, 1996: p6).

According to Kvale, conversations are essential to obtaining scientific knowledge. He asserts that the conversation *"rests on a joint commitment of the participants to seek the truth – it is an attempt to get beyond mere opinion to true knowledge"* (Kvale, 1996: p20).

According to Terre-Blanche & Durrheim *"qualitative researchers argue that social phenomena are context dependent and that the meaning of whatever it is that the researcher is investigating depends on the particular situation an individual is in"* (Terre-Blanche & Durrheim, 1999: p46). The purpose of the analysis is to transform data about



change interventions to meet the research purpose of understanding social phenomena in organisations. Hence, evaluation was done through sharing the elicited themes with members of Nedbank and relating their experience to these themes and documenting their feedback.

Some of the techniques adopted to display, depict and improve validity were:

- Systems archetypes using balancing and reinforcing loops
- Metaphors to describe how organisations can be viewed as living systems
- Learning and performance models
- Geometric philosophy
- Theoretical concepts corroborated with organisational experience
- Structured process for the development of worldviews.

According to Terre-Blanche & Durrheim, “*validity is defined by the degree to which the researcher can produce observations that are believable for her / himself, the subjects being studied and eventual readers of the study*” (Terre-Blanche & Durrheim, 1999: p46).

### **3.5 The Research Assumptions and Limitations**

The purpose of the study was aimed at understanding social phenomena and its relation to organisational change within the context of Nedbank’s turnaround phase. The assumption implied throughout the study implies that the variables and factors under investigation illustrate the dynamic relations among variables and hence it is assumed that these variables characterise, influence and condition the phenomenon. Hence, the recommendations are limited in the sense that they only add value to this context and should not be generalised to other contexts.

### **3.6 Summary**

The research therefore adopted the qualitative approach to explore the need for a paradigm shift to address the challenges of organisational change in the knowledge world. The research process, interpretation and analysis added value in terms of surfacing additional and unintentional issues related to strategy, structure, process, mindset and innovation.

#### **Chapter 4** **Presentation of Research Results**

This chapter was structured primarily for the intended (audience) use of the Transformation Unit in Nedbank, as it is most relevant to their purpose. The chapter highlights emergent themes, which respond to research questions in order to fulfil the research purpose of identifying themes to complement and supplement Nedbank's existing strategy as it relates to organisational change.

This chapter presents the outcome as a result of following the methodology and process described in chapter three. This chapter further presents the results as a response to research questions on organisational change by exploring the implications of a holistic paradigm that is recommended to alleviate the challenges facing organisational change within the context of Nedbank turnaround phase.

The problem situation (challenges facing organisational change in Nedbank), was explored with respondents and through purposeful conversations, nine worldviews were extracted. Respondents were from various parts of the business and the purpose of the conversations was to listen to their stories on organisational change and to elicit the underlying meanings that developed the worldviews on organisational change in Nedbank. Probing questions were required to elicit root definitions, which Checkland refers to as "*CATWOE - Customers, Actors, Transformation, Weltanschauung, Owners and Environmental constraints*" (Checkland, 1989: pp224-225). These probing questions were derived from a combination of Checkland's problem content system and problem solving system (Checkland, 1989: pp295-298).

These conversations took place over a period of two months until a sense of comprehensiveness was achieved, when additional perspectives were not creating any fundamentally new and differing worldviews. The worldviews were authenticated in the sense that elements within the stories of multiple respondents supported and reinforced existing worldviews. Hence, the worldviews do not directly correspond to a particular respondent but contain elements from multiple perspectives.

It is important to note that, although the stories revealed from respondents were based on their past experience, the context was based on Nedbank's recovery and turnaround phase. Annexure A is a summary of the data and should be read in conjunction with the rest of the chapter. For ease of reference the worldviews are numbered as follows:

<b>WORLDVIEW NUMBER</b>	<b>WORLDVIEW DESCRIPTION</b>
1.	From an early adopter of product / channel / service innovations to the leader in technological advancement
2.	From an arrogant, egotistical, elitist financial institution to an agile, lean, client centric, innovative leading, competitive bank in South Africa
3.	From an 'Old Boys Club' to 'everyone' in the bank
4.	From an ignorant, insensitive organisation to an all inclusive and culturally diverse one.
5.	From a low key follower mentality to big thinker, high flyer, risk taker, bold mentality
6.	From a multi divisional bank view to a one bank view, working as a team across silos
7.	From a bureaucratic (silo) pillar based, follower organisation to an output driven, team based, leader organisation with decentralized IT within the business units
8.	From a command and central control with limited delegation of responsibility to a federal model where each business owner owns the technology facilitating the businesses services with a limited central Management Information System (MIS) function
9.	From a process dictated, blame take no responsibility organisation to a truly customer centric (internal and external) organisation

Table 5: Description of Worldviews

These worldviews were clustered into five themes as follows:

<b>THEME</b>	<b>WORLDVIEWS</b>
Innovation	1 & 2
Culture	2,3 & 7
Diversity & Mindset	4,5 & 9
Strategy & Structure	6,7 & 8
Process	9

Table 6: Worldviews clustered into themes

Through the process of content analysis and interpretation (as described in chapter three), various challenges, issues, meanings, assumptions, measures and constraints surfaced that were used to identify conceptual frameworks that helped to understand these challenges from a holistic paradigm and identify research questions that will address the worldviews on organisational change, within the context of Nedbank's turnaround phase.

The first theme revolved around innovation, which clustered worldview 1 & 2. The essence of worldview 1 & 2 presented the challenge of becoming an agile, competitive and innovative bank leveraging from existing resources. There seems to be an understanding that great potential exists within existing employees however due to the size and complexity of divisions and non-alignment of priorities, this potential is prevented from being unleashed. In terms of this worldview integrity, respect, appreciation for diversity, caring and partnerships are valued by respondents. These problem symptoms directed the study to explore concepts within the frameworks of dynamic capabilities, knowledge management, organisational learning and complexity theories to identify recommendations from a holistic perspective.

The second theme revolved around the culture of the organisation that clustered worldviews 2, 3 and 7. The essence of these worldviews presented the voice of the informal network that perceived the organisation as an 'Old Boys Club' which created an arrogant, egotistical, elitist culture. In terms of this worldview, diversity and integrity is

valued by respondents. These problem symptoms directed the study to explore the significance of patterns and strange attractors within the framework complexity theories to identify recommendations from a holistic perspective.

The third theme revolved around diversity and mindset that clustered worldviews 4 and 5. The essence of these worldviews describes the existing mindset as defensive, risk averse and insensitive to cultural diversity. There is a strong belief that cultural diversity can be leveraged to become market differentiators and that bold risk taking mentality will create an inspiring and innovative bank. In terms of this worldview, entrepreneurship, innovation, dignity and respect are valued by respondents. These problem symptoms directed the study to explore external influences of change and concepts within the frameworks of knowledge management and organisational learning to identify recommendations from a holistic perspective.

The fourth theme revolved around structure and strategy that clustered worldviews 6, 7 and 8. The essence of these worldviews describes the need to change from bureaucratic, silo based, multidivisional bank to a view of oneness working as a cohesive and aligned team delivering exceptional customer service through the collaboration and cooperation of employees, clients and suppliers. In terms of this worldview, accountability, transparency, professionalism, fairness, honesty, determination and diligence are valued by respondents. These problem symptoms directed the study to explore external influences, concepts within the frameworks of systems thinking, complexity theories, dynamic capabilities, organisational learning and knowledge management to identify recommendations from a holistic perspective.

The fifth theme revolved around organisational processes and practices (worldview 9). The essence of this worldview described the embeddedness of the previous process focused strategy that has become so complex and cumbersome that it has stifled creativity and allowed people to create defences that inhibited delivery and moved attention away from the customer towards internal processes. In terms of this worldview, honesty, integrity, fairness, trust and good leadership are valued by respondents. There seems to be a need for personal conversations to achieve delivery rather than blindly following

processes that add little value to internal and external clients. These problem symptoms directed the study to explore concepts within the frameworks of systems thinking, complexity theories, organisational learning and knowledge management to identify recommendations from a holistic perspective.

Hence the themes extracted from worldviews directed the study to explore the following research questions that were informed by conceptual frameworks explored in the literature review for the purposes of identifying interventions based on a holistic paradigm. These interventions are intended to complement existing turnaround strategy and are highlighted as alternatives to existing change initiatives.

The format of this chapter continues with the research paradigm that classifies the results as a representation of the constructed reality in search for meaning and meaningful relationships and their consequences, which is characterised by the following research questions in relation to the Nedbank context:

- What are the external factors that influence organisational change?
- How can we use systems thinking to understand the impact of change?
- What are the implications of understanding organisational change from a metaphorical perspective?
- How does the interaction of individuals and systems impact on change?
- What is the significance of patterns in understanding organisational change?
- How can dynamic capabilities be used as an organising structure for effective change?
- How can strange attractors influence organisational change?
- Can organisational learning act as a catalyst for change?
- What are the implications of knowledge management on organisational change?

The following results are described as themes that inform the research questions that have been constructed through the research process, data gathering, content analysis and Interpretation described in chapter 3.

## Response to research questions

### *4.1 What are the external factors that influence organisational change?*

The literature review identifies external factors such as globalisation, information technology, demographic and regulatory change. The review classifies change as a condition and process that can be planned, unplanned, tactical or strategic. Hence the theme identified in terms of strategy formulation is the focusing, redefining and repositioning the relationship between Nedbank and its environment. The diagram below represents the environmental factors that influence Nedbank at a given point in time.

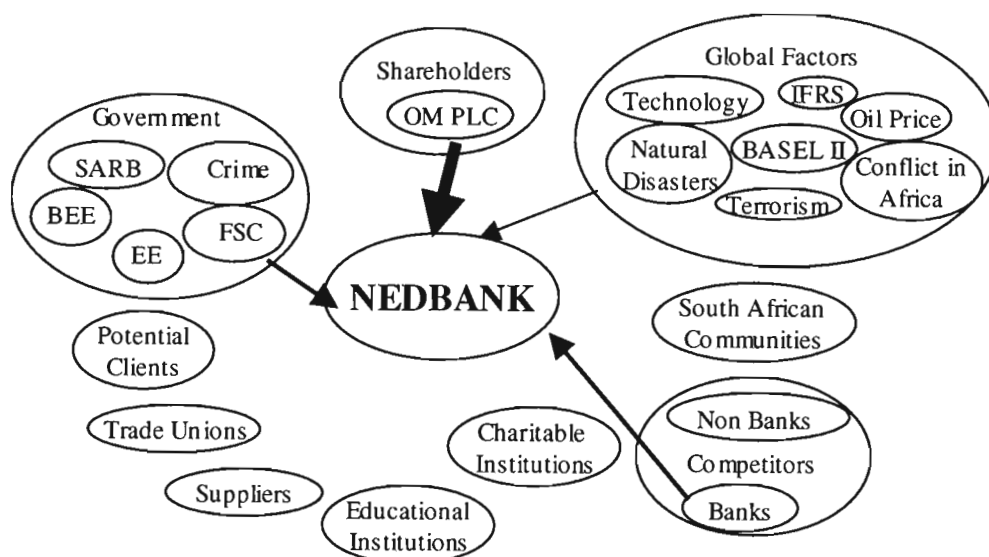


Figure 21: Nedbank's Environmental Influences

Although systems concepts classify the graphical representation of environmental factor's influence to the boundary of the system as superfluous, it highlights that among the many external factors, the Shareholders, Government and Competitors are seen to be the most significant influences to the Nedbank system. This is corroborated by the number of compliance projects that are currently being run in Nedbank, the frequency and nature of monitoring and control reports to shareholders and the employee survey results classifying Nedbank as not being responsive to changes in the market as well as client needs.



Hence the theme of Nedbank's inter-relationship and co-evolution with its environment is highlighted as a response to the question of factors influencing change in terms of this case. The interrelationship between the system and its environment provides insight to the next question.

#### ***4.2 How can we use systems thinking to understand the impact of change?***

##### ***4.2.1 Internal cohesion among subsystems***

Open systems theory describes an organisation as a system that has inter-related subsystems that is also related to the environmental supra-system. Morgan's (1997) diagnostic tool provides valuable insight in identifying internal cohesion among subsystems. The result provides an alternate description of the entire system that will be impacted by any change intervention. Due to the fact that each business cluster has their own sub-systems and characteristics, it is possible for respondents from one business cluster to perceive, for example, the managerial style as authoritarian and another cluster to perceive the managerial style as democratic. However, to obtain an understanding of the total system, respondents from the Group Strategy were used to corroborate the results because they operate across all clusters.

The analysis reveals that:

- Nedbank's environment is stable and unpredictable. The stability originates from the regulation and control of the South African Reserve Bank and Financial Sector Charter and unpredictability stems from global factors and competitors. (Refer to Figure 21)
- There is no cohesion among internal subsystems as well as the subsystems and the environment
- The strategy employed is seen to be reactive and defensive. This is corroborated by the projects that have been identified to fix what's broken and to defend market share from competitors.
- The technology subsystem is seen to be in stabilization phase of consolidating synergies from mergers and not concentrating on new product features and functionality

- The human cultural subsystem is seen to be more orientated towards work as opposed to self-actualisation orientation towards work. An existing initiative that is aimed at addressing this challenge is the transformation initiative that is focused on creating a high performance culture
- The structure subsystem is seen to be bureaucratic and hierarchical, which was corroborated by conversations on the employee survey results
- The managerial style is perceived to be authoritarian and consensual, which is corroborated by the need for accountability and control.

The analysis is illustrated below by Morgan's profile of organisational characteristics as depicted by respondents.

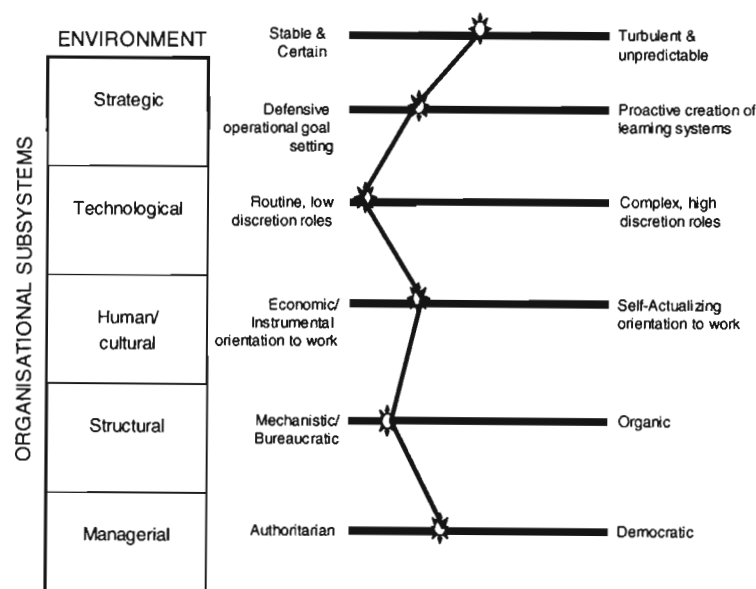


Figure 22: Profile of Nedbank Organisational Characteristics.

Further research is required to analyse the dynamics among sub-systems. However, this diagnostic systems approach provides valuable insight for organisational designers and developers when analysing the impact of change interventions into the Nedbank system. The theme in response to the research question is that change interventions should direct subsystems to be more coherent with the environment.

#### 4.2.2 Identification of limiting processes and growth processes within the system avoiding the tragedy of the commons, fixes that fail and shifting the burden archetypes

This theme implies that management should take a holistic approach to organisational change and not only focus on the efficiency of a part but the effectiveness of the whole.

The complexity of change is an interesting phenomenon. The assumption explored in the literature review is that every change initiative executed at a level of entropy reinforces itself to achieve a higher level of entropy or balances itself to maintain the existing level of entropy. The case study reflects on past events to understand the impact on the system. A work group comprising of respondents and myself examined events to understand the phenomenon from a practical and theoretical perspective.

The first event that was explored depicted the construct of the tragedy of the commons system archetype as described in the literature review. Business clusters that focused on the efficiencies of their silos contributed to the ineffectiveness of the whole. The recommendation that emerged from the group was to reorganise business practices to alleviate systemic resource limitations.

The second event explored depicted the construct of the fixes that fail systems archetype. The retrenchment intervention was intended to improve profitability; however, the unintended consequence of declining staff morale affected productivity, which indirectly affected profitability, negatively. The recommendation that emerged was to encourage a paradigm shift that focuses on fixing the problems and not just the problem symptoms.

The third event explored depicted the construct of the limits to growth systems archetype. Acquisitions and mergers were seen to be growth processes to increase market share, however, the capacity required for merger and restructuring projects constrained the resources required for projects that focused on product innovation. This created the balancing process that described the limitation on market share growth. The recommendation that emerged from the group was that organisational change agents should caution against what worked in the past and focus their attention from reinforcing

processes to balancing processes as well. Change agents should analyse the inter-relationship between success strategies and potential limitations when designing change interventions. (Change interventions in this context refer to innovation projects).

The fourth event explored depicted the construct of shifting the burden systems archetype. It describes the culture of 'short-termism' that is intended on relieving the problem symptoms quickly instead of focusing on the real problem. The literature review highlights the situations where executive influence alleviates delays to project implementation (short-termism) and less attention is given to innovation process improvements. The recommendation from the workgroup was to use tools like systems archetypes to change mental models fixed on short-termism.

The outcome of analysing past events inform the research question in that systems thinking provides a deeper understanding of real problems and not just problem symptoms. It provides an informed view of the impact that change can have on a system. By using systems thinking as a tool to identify limiting and growth processes thereby providing management with relevant information to make informed strategic decisions.

#### ***4.3 How does the interaction of individuals and systems impact on organisational change?***

Purposeful conversations were convened with respondents on concepts relating to complexity that resulted in outcomes, which responded to two other research questions i.e.: *What are the implications of understanding organisational change from a metaphorical perspective; and How can strange attractors influence organisational change?*

The concepts that were discussed with respondents were based on the work done by Morgan (1997), Oliver & Roos (1986), Dove (1999), Middleton-Kelly (1997), Davis & Beeson (2000) and Stacey (2003) as highlighted in chapter 2.

The conversations revolved around theoretical concepts on complexity and its implications for management. The literature review explored the metaphorical perspective that organisations are like species that adapt to their environment by developing patterns of relations, and that organisations exist in a state of tension with the environment. Hence strategy should be seen as a co-evolving process that influences the socio-ecosystem.

The organismic model is seen as an adaptive response by the system acting as a whole where order arises from the iteration of simple rules of interaction and emergence is the unpredictable product of multiple interactions and interventions by individual actors. If a system has a sufficient degree of complexity, then randomness, diversity and instability become resources for change where a new order is the natural outcome through spontaneous self-organisation.

Chaos theorists believe that system behaviours are influenced through 'strange attractors' that either pull a system to a state of equilibrium (as in case with negative feedback loops) or flip the system into a completely new configuration (as in the example of the Lorenz attractor). The implication here is that hierarchies will emerge and that managers should facilitate change processes and not control them. Another attractor identified is the management of context so that appropriate forms of self-organisation can occur. Hence, transformational change involves the creation of new contexts so that dominant attractor patterns can change/flip into new ones. Managers should establish the power of established contexts and create conditions for the next context to emerge. Thus, managers can use attractor patterns to identify small changes that have large effects.

The respondents agreed that metaphors open our minds to systemic and novel ways of thinking and that a paradigm shift is required from mechanistic thinking about finite organisational goals to non-linear systemic thinking about ongoing learning and adapting for survival. However, all respondents agreed that banking by nature is transactional and their concerns are based on the practical aspects of understanding change from a metaphorical perspective. They go further by recommending similar frameworks such as Spiral Dynamics and an integrated framework by Sutherland & Iles (2001) highlighted in chapter two.

#### ***4.4 What is the significance of patterns in understanding organisational change?***

A theme that emerged from the study, which supported the central concerns of respondents, was the understanding of complexity in pragmatic and practical terms. Although respondents perceived order and chaos as a paradox, the literature review explored order as an emergent property of complexity that arises at the edge of chaos. The theme that emerged was the use of geometry to explain the significance of patterns and how order is described through patterns, which is the result of the eternal principle of unity. The review explored philosophical and geometric evidence on how rationality emerges from irrationality. This was explained using circles and an iteration of simple rules where rationality, order and unity was the outcome. From a metaphorical perspective, a living organism is understood as a 'unity' and the component properties of its parts are understood in relation to each other as a unit in unity. This supports the perspective of viewing an organisation as a living system that lends credence to holistic non-linear thinking. Although respondents accepted this theme as insightful, they had the same concerns and recommendations as research question 4.3.

#### ***4.5 How can dynamic capabilities be used as an organising structure for effective change?***

The theme that emerged from conversations with respondents were related to the theme in 4.1 in the sense that resource configurations within the system should be organised in relation to the system's environment e.g. markets that emerge, evolve, split, etc. Due to the fact that competitors can duplicate and imitate capabilities, the study refers to routines and processes for creation of resource configurations as the competitive advantage. The respondents concern was that resource configuration processes implied collaboration and alignment across the organisation that is in contrast to the embedded processes that is silo and cluster specific. This was highlighted as one of the key challenges that needs to be addressed. The literature review proposes a model that juxtaposes task complexity with environmental stability, which categorises resource creation processes as intuitive, creative, professional and systematic. The choices of adopting congruent or incongruent

processes to create capabilities are dependent either on the strategic direction of the organisation or as an emergent property of iterations of interventions by agents. Although respondents maintained their consistent concern regarding emergence, they were more comfortable with the linear process of planning and controlling resource configurations. Resource creation processes was accepted as a significant theme, however, a paradigm shift is required for implementation of non-mechanistic processes.

#### ***4.6 Can organisational learning act as a catalyst for change?***

The literature review highlights theoretical evidence of emergent patterns that exist among and within individuals, groups, organisational and inter-organisational levels of learning. This implies that knowledge networks exist as a social relationship among actors. The respondents felt very strongly about management's role in nurturing and developing knowledge networks and more specifically creating conditions to create, develop and improve knowledge networks. They acknowledged the wealth of explicit and codified knowledge and emphasized the challenge of access to tacit knowledge, which can be described as a resource creation process referred to in 4.5.

The review highlights the interactive perspective that knowledge is constructed through the interaction of agents to create learning environments that lead to characteristics of non-linear, dynamic behaviour, emergence and self-organisation. Hence in terms of innovation and change, learning and knowledge sharing are fundamental processes that create commitment and trust through interaction. According to Engelhardt & Simmons (2002), self-organisation by its very nature is a learning environment and that if diverse individuals are given space and freedom, will naturally organise in unpredictable ways to rise to higher levels of performance through experimentation.

Although respondents agree that initiatives to address barriers to performance like culture, processes and practices have been initiated in Nedbank, the suggestion of freedom to experiment and self-organization of actors is limited and constrained by the organisation's hierarchical structure and silo based operations. The respondents agree that learning contributes to change and that the recommendation would be to utilise learning processes

to transform existing mind sets from mechanistic to non-linear holistic thinking and use long term measures to monitor performance. The respondents felt that these recommendations also respond to the research question: ***What are the implications of knowledge management on organizational change?***

The review highlights a knowledge management framework as the inter-relationship between people, process and technology within organizational culture. The models identified in Chapter 2 i.e. *Shukla's Outcomes of Systems Learning, Media of Interchange and the Organizational Learning Systems Model*, are based on the underlying assumptions that organisations are dynamic social entities that exist within a complex environment and therefore recommendations for 4.6 applies.

The relationship between the themes highlights the challenge of transforming individuals and organisations from mechanistic thinking and processes to be more adaptable to the existing world of knowledge and information.



## CHAPTER 5

### LEARNING & REFLECTIONS

This chapter presents the learning and reflections as a result of the outcomes described in chapter four.

The literature on organisational change is large and covers theories, approaches, models and beliefs that have evolved over time and will continue to evolve. There are many case studies that describe change processes and methodologies and some cases provide evidence of organisational change outcomes that are intended to develop credibility for particular approaches and some case studies are used as benchmarks and foundations for learning. This research was primarily based on context and events within the Nedbank case to elicit themes that complement the existing turnaround and transformation strategy, signifying the need for a paradigm shift that is congruent with the knowledge world.

The literature review categorises organisational change as planned, emergent, episodic, continuous, developmental, transitional and transformational (Iles & Sutherland, 2001: pp14-17). The study focuses on how best to leverage from change interventions and how managers should organise themselves to leverage opportunities from change. Although the study identifies various models and approaches it highlights systems thinking as an approach that is most relevant to the context of this case. The identification of complex networks of interrelationships provides insights to exploring and understanding properties of the whole and relations between the elements that make up the whole.

The responsibility of leadership and management is to provide mechanisms and activities to achieve sustainable business success and are ultimately accountable to stakeholders of the organisation. The context describes the case in a phase of transformation and turnaround within the organisational lifecycle. Mechanisms to achieve business success are seen as existing change interventions to achieve organisational targets. I make the case that these change interventions have been designed by contemporary mechanistic paradigms that are incongruent with the knowledge world. The purpose of the study was not to measure or highlight differences in outcomes from particular paradigms but to elicit

themes that will highlight trip wires and organisational traps that prevent an organisation from achieving its goals.

The theme that consistently emerged was the role of the manager and the significance of mental models, mindsets and worldviews as well as highlighting the importance of making informed decisions around organisational change initiatives and strategies. Hence systems thinking provide managers with an opportunity and an alternative for understanding and diagnosing organisational situations and learning about them, for the purposes of effective and sustainable change within organisational constraints, such as conflicting objectives and a dynamic and complex environment.

Managers and change agents will have to consider the entire lifecycle of change from ideas to strategy to designing and implementing change interventions as well as learning and reflecting from these interventions. Iles & Sutherland (2001) researched an integrated framework that present models to address the following questions:

- How can we understand complexity, interdependence and fragmentation?
- Why do we need to change?
- Who and what can change?
- How can we make change happen?

Iles & Sutherland (2001: p23)

In addressing the above questions Iles & Sutherland (2001) researched and identified change management tools, models and approaches, and reflecting upon organisational change issues surfaced from worldviews, the following activities should be considered as part of the diagnosis, planning and execution of change interventions:

- Understand and analyse driving and resisting forces of change
- The readiness and capability to enact change
- The power structures that enable and disable change
- External and internal influences of change
- The rationale for change incorporating multiple perspectives and worldviews

- Processes and practices that act as constraints and bottlenecks
- Analyse cultural barriers to change
- Improve competitive performance through change
- Embracing emergence by understanding the interaction between content (what), process (how) and context (within history, culture, economic and political)
- Understanding the environment and external factors impacting on change.
- Analysing, commitment, enrolment and compliance to change
- Marketing interventions and continuous quality improvement
- Leveraging from group level change interventions, individual level change interventions, system and individual behaviour.

Hence, in every worldview identified, the above activities will be required to address the challenges of organisational change.

Einstein stated that we couldn't solve our problem with the same thinking that created it. Due to the embeddedness of past practices, Nedbank is currently facing a complex web of challenges and issues that are being addressed from the centre (group) as well as individual business clusters. The size, complexity, political influences and mechanistic mind sets exacerbates the challenge of obtaining symmetry across the whole, alignment among mindsets, views and perspectives thereby not reaping synergies across the whole. Hence the benefit and usefulness of this study is in the sense that it provides management with insight on how to achieve symmetry and synergies across the whole when engaging in change activities throughout the organisation's life cycle.

Although management acknowledges the need for creativity and innovation to alleviate this complex web of embedded issues and multiple change interventions, their mindsets remain consistent with the contemporary linear and mechanistic ways of achieving stability through three year planning, measuring and monitoring processes. It is in this regard that the study is useful in the sense that it challenges the contemporary management paradigms and offers practical recommendations and theoretical grounding for unleashing creativity within the organisation. This study offers practical examples of emergence as self-organising interaction among people and its applicability to business,

innovation and creativity. Hence this study provides useful information that is intended for managers to question their current mindsets.

Personally, I found that the use of a qualitative approach to organisational inquiry provided me with a deeper understanding of issues existing in the Nedbank system. I've experienced how the synthesis of multiple perspectives enriched my understanding of issues within the system. This approach transforms information into insights and wisdom about the issues embedded in the Nedbank system. This wisdom should allow managers to manage the rules that underpin the Nedbank context in such a way that it can be used to direct the creation of the desired Nedbank future, in a similar way highlighted by Morgan (1998) in Chapter 2. Hence, I recommend that Nedbank develop a change and strategy process that is continuous and not restricted to a yearly planning and budgeting process. I believe that all change interventions should utilize similar frameworks or at least understand the wisdom that exists within the system so that multiple change interventions complement each other. I now understand that any change within a system is systemic.

Harkema (2003) refers to the values of trust and commitment that will emerge through the interaction of individuals and that knowledge sharing results in learning that underpins the innovation process. Although I support his assertion and agree that the implementation of these concepts have the potential to unleash great performance, I believe that there are a few steps that are needed in order to create the conditions for organisational performance to occur. The worldviews imply that the Nedbank Group Strategy is not clearly articulated and is not aligned across all clusters. They also highlight the lack of positive interaction within and between all clusters. People constitute and drive clusters, and it is their behaviour and conversations that influence the quality of interactions within the system. In my view, an intervention is required to provide individuals with the knowledge that will improve the quality of conversations. These conversations should be directed towards achieving a shared mental model that address the actions required to achieve Nedbank's desired future / strategy. Such a learning mechanism should first be experienced, displayed and supported by the leadership of the organisation, which will encourage the rest of the organisation to follow suite.

Knowledge sharing and learning should also be related to operational and business performance. The Nedbank system is loaded with complex projects and change interventions. I would recommend that a framework should be developed to understand the impact that the current initiatives are creating on the system as well as change interventions, directed towards the desired future, interrelate with each other.

The manager's role evolves into one that improves the quality of interaction among individuals through knowledge sharing and learning and developing this mechanism to be a competitive advantage.

This study associates theoretical concepts with real experiences, practices and events within the context. Respondents' felt enriched, enthused and excited when engaging with multiple views and perspectives and determining how it impacts on their daily activities.

This study is relevant to actors, customers and owners of the system identified as the transformation unit, the CEO, Group Exco, employees, change and knowledge activists, line, middle and senior management. It is also relevant to those who are interested in expanding the research issues that emerged from the study.

Change management should not be seen as the panacea for all solutions. It merely provides a deeper understanding for informed decision making. Change management should co-exist with effective leadership, excellent products and services, sound financial management, compelling vision and strategy, marketing and committed employees, which are fundamental requirements for business success. Hence, change management is not a consequence of once off events nor is it just a component of a project but a continuous relationship and interaction of individuals and systems in an organisation.

The need for a paradigm shift presented a few lessons for Nedbank in the sense that the approach to diagnosing problem situations and formulation of strategic interventions are constrained by the contemporary paradigm. The holistic paradigm places emphasis on the consequence of the whole and surfaces underlying patterns and structures that inform the

development of solutions and transforms management's role to become facilitators of continuous learning conversations.

The research process was a truly enriching experience that informed my way of viewing the world.

**ANNEXURE A: SUMMARY OF WORLDVIEWS**





## REFERENCES:

Archetypes: Interaction Structures of the Universe, <http://www.systems-thinking.org/arch/arch.htm>

Beck Don E, Cowan Christopher C (1996), '*Spiral Dynamics*', Blackwell Publishers, Cambridge Massachusetts

Beesley Lisa (2004), '*Multi Level Complexity in the Management of Knowledge Networks*,' Journal of Knowledge Management, Vol 8, No.3, 2004, pp71-100

Beeson Ian, Davis Chris (2000), '*Emergence and Accomplishment in Organisational Change*,' Journal of Organisational Change Management, Vol 13, No 2, 2000 pp178-189

Benjamin F Crabtree, Miller L William (1999), '*Doing Qualitative Research*', Sage Publications, London, 2<sup>nd</sup> Edition

Bowman C, Collier N (2004), '*How to Determine your Future Resource Creation Processes*, Cranfield School of Management, Cranfield, Bedford, MK43 OAL

Chawla S, Renesch J (1995), '*Learning Organisations, Developing Cultures for Tomorrow's Workplace*,' Productivity Press, Portland, Oregon

Checkland Peter (1989), '*Systems Thinking Systems Practice*', John Wiley & Sons Ltd, Great Britain

Cowings, John S (1999), '*Strategic Leadership & Decision Making*,' <http://www.ndu.edu/ins/>

Dawson Ross (2000), '*Knowledge Capabilities as the Focus of Organisational Development and Strategy*,' Journal of Knowledge Management, Vol 2 No. 4, 2000, pp320-327

Denzin Norman K & Lincoln Yvonna S (1998), '*The Landscape of Qualitative Research: Theories and Issues*', Sage Publications, London

Denzin Norman K, Lincoln Yvonna S (1998), '*Collecting and Interpreting Qualitative Materials*', Sage Publications, London

Dohny Linda (1999), '*Using Systems Thinking to Create Winning Solutions to Pressing Challenges*' Dayton: Oct 1999, Vol 51, Iss2, pg19

Dove Rick (1999), '*Knowledge Management, Response Ability and the Agile Enterprise*,' Journal of Knowledge Management, Vol 3, No. 1, 1999 pp18-35

Drucker Peter F (1999), '*Management Challenges for the 21<sup>st</sup> Century*' Harper Collins Publishers Inc, New York

Eisenhardt KM, Martin JA (2000), '*Dynamic Capabilities: What Are They*', Strategic Management Journal, Vol 21, 2000, pp 1105-1121

Engelhardt CS, Simmons PR (2002), '*Creating an Organisational Space for Learning*', The Learning Organisation Bradford: 2002, Vol 9, Issue 1, pp39-47

Flick Uwe (1998), '*An Introduction to Qualitative Research*', Sage Publications, London

Garbers Johan G (1996), '*Effective Research in the Human Sciences*', J l van Schalk Publishers, Pretoria

Gorelick C, Milton N, April K (2004), '*Performance Through Learning, Knowledge Management in Practice*', Elsevier Butterworth – Heninemann, Oxford

Gummesson Evert (1991), '*Qualitative Methods in Management Research*', Sage Publications, London

Haldin-Herrgard Tua (2000), '*Difficulties in Diffusion of Tacit Knowledge in Organisations*', Journal of Intellectual Capacity, Vol1, No. 4, 2000, pp357-365

Harkema Saskia (2003), '*A Complex Adaptive Perspective on Learning Within Innovation Projects*', The Learning Organisation, Vol 10 No.6, 2003 pp340-346

Iles Valerie, Sutherland Kim (2001), '*Organisational Change: Managing Change in the NHS. A Review for Health Care Managers, Professionals and Researchers*', NCCSDO- London School of Hygiene & Tropical Medicine, London, Issue: May 2001

Keene Angelique (2000), '*Complexity Theory: The Changing Role of Leadership*' Industrial and Commercial Training. Guileborough: 2000 Vol 32 Iss 1; p15

Krippendorff Klaus (2004), '*Content Analysis: An Introduction to its Methodology*', Sage Publications, London, 2004, 2<sup>nd</sup> Edition

Kvale Steiner (1996), '*InterViews: An Introduction to Qualitative Research Interviewing*', Sage Publications, London

Lawlor Robert (1982), '*Sacred Geometry: Philosophy & Practice*', Thames and Hudson Ltd, London

Maturana HR, Varela FJ (1928), '*Autopoiesis and Cognition: The Realization of the Living*', Driedel Publishing Company, Dordrecht, Holland, Vol 42, 1980

McGuinness T, Morgan RE (2000), '*Strategy, Dynamic Capabilities and Complex Science: Management Rhetoric vs Reality*', Strategic Change Journal, June/July 2000, pp209-220

Mitleton-Kelly Eve (1997), '*Organisations as Co Evolving Complex Adaptive Systems*' <http://bprc.warwick.ac.uk/eve.html>

- Morgan Gareth (1997), *'Images of Organisation'* Sage Publishers, Thousand Oaks, California
- Morgan Gareth (1998), *'Images Of Organization: The Executive Edition'*, Sage Publications Inc. Thousand Oakes, California
- Mouton J (1998), *'Introduction to Qualitative Research: Module 3'*, Human Sciences Research Council, 1998
- Oliver David, Roos Johan (1998), *'From Fitness Landscapes to Knowledge Landscapes,'* Systemic Practice and Action Research, Vol 12, No. 3, 1999
- Olson E, Eoyang G (2001), *'Facilitating Organisational Change: Lessons from Complexity Science'*, Jossey-Bass/Pfeiffer, San Francisco
- Schwandt David R, Marquardt Michael J (1999), *'Organizational Learning: From World Class Theories to Global Best Practices'*, St Lucie Press, New York 2000.
- Selamat M H, Choudrie J (2004), *'The Diffusion of Tacit Knowledge and its implications on Information Systems: The role of Metabilities'*, Journal of Knowledge Management, Vol 8, No. 2, 2004 pp 128-139
- Senge PM, Roberts C, Ross RB, Smith BJ, Kleiner A (1994), *'The Fifth Discipline Fieldbook'* Nicholas Brealy Publishing Ltd, London
- Shireman William K (1999), *'Business Strategies for Sustainable Profits: Systems Thinking in Practice'* Systems Research and Behavioural Science, Oct 1999, ABI Inform Global pp453-462
- Shukla Madhukar (1997), *'Competing Through Knowledge: Building a Learning Organization'*, Sage publications, New Delhi
- Stacey Ralph D (2003) *'Strategic Management and Organisational Dynamics, The Challenge of Complexity'*, Pearson Education Ltd, Essex, United Kingdom, 4<sup>th</sup> Ed.
- Strati Antonio (2000), *'Theory & Method in Organisation Studies: Paradigms and Choices'*, Sage Publications, London, pp134-135
- Terre-Blanche M, Durrheim K (1999), *'Research in Practice: Applied Method for the Social Sciences,'* University of Cape Town press, Cape Town
- The Official Mahatma Gandhi Archive and Reference Library, The Mahatma Gandhi Foundation – India, <http://www.mahatma.org.in/quotes>
- Thietart et al (1999), *'Doing Management Research: A Comprehensive Guide,'* Sage Publications, London
- Winter Sidney G (2002), *'Understanding Dynamic Capabilities,'* A Working Paper of the Reginald H Jones Centre, Wharton School University of Pennsylvania.