

# **The Balanced Scorecard as a instrument to manage strategy in the Water Board**

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## ABSTRACT

Monitoring and evaluation of strategy is a very critical stage of the strategic management process as this ensures that a gap between intended and realised strategies is as small as possible to guarantee successful strategic performance of an organisation. A Balanced Scorecard is an important tool during the strategy evaluation stage and enables an organisation to continually improve, create value, determine how competitive advantage is sustained, how core competencies are improved upon and to satisfy the organisation's customers.

The study is conducted within the Water Boards in South Africa to determine the extent of the utilisation of strategic management instruments and if the Balanced Scorecard could be proclaimed as an instrument that is central to strategic and performance management. A review of literature on strategic management and that of a Balanced Scorecard, including the balanced performance measures was performed to understand if and how the Balanced Scorecard could be utilised as an appropriate instrument for strategic management. Data was collected using quantitative methods through a Likert scale questionnaire and the results obtained were analysed and interpreted. Reliability and validity of a measuring instrument used was determined through the Cronbach's alpha coefficient. A Pearson correlation index was utilised to measure correlation among variables.

A contribution towards integration of the Balanced Scorecard and strategic management within the Water Boards was investigated with the results proclaiming the Balanced Scorecard as a strategic management instrument of choice. Recommendations were made and areas for future research were provided. The Balanced Scorecard should however not be viewed as a panacea as it cannot make a strategy not worth implementing to be implemented. The Balanced Scorecard cannot also make strategic management happen by magic, thus management effort and leadership is required to ensure strategic success through implementation of a Balanced Scorecard.

### Key words

Balanced Scorecard, strategic management, balanced performance measures, Resource Based View (RBV), dynamic capabilities

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## LIST OF ACRONYMS

BSC – Balanced Scorecard

KPI – Key Performance Indicators

MVA – Market Value Added

PDCA – Plan-Do-Check-Act framework

QCDE – Quality, Cost, Delivery and Education

RBM – Results Based Management

RBV – Resource Based View

RoA – Return on Assets

RoE – Return on Equity

WB – Water Boards

WSA – Water Services Act

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# CHAPTER ONE

## NATURE AND SCOPE OF THE STUDY

*“The beginning is the most important part of the work” – Plato*

### 1.1 Introduction and background

The changing world of power and economics, worldwide demographic changes and a new recognition of cultural diversity have a fundamental impact on the business, and public utilities are not exculpated from such factors. It is therefore incumbent upon managers of various companies, including public utilities to become strategic in everything they do due to the fundamental impact of the above factors (Moore & Wen, 2007:10).

South Africa has a range of water utilities, and among them are the Water Boards (WB), which were established by the national government through Chapter V, Section 28 of the Water Services Act (1/1997) (WSA), by the Minister of Water Affairs as strategic institutions to enable service delivery. In accordance to Section 29 of the WSA, the primary activity of a WB is to provide water services to other water services institutions within its service area.

In carrying out such an important national government mandate of water service delivery, the WB should be run in a manner that incorporates sustainability components of economy, environment and society. In accordance to Van der Steen and Howe (2009:116) monitoring the value of general sustainability indicators for the entire system will give an indication to policy and decision makers whether there is movement towards or away from the sustainability criteria, and this gives impetus to a responsibility of national government to regulate and monitor the performance of WB against their set strategies and a broader mission of government.

The Minister of Water Affairs, as a sole shareholder of the WB, is mandated to monitor the WB performance with regards to service delivery, operational efficiency, water quality, infrastructure investment, financial and commercial viability, and governance and regulatory compliance. The mandate to monitor performance is enabled by Section 44 of the WSA.

Sahu and Mookherje (2008:61) alludes that to ensure that water utilities are being run in a sustainable manner, a set of Key Performance Indicators (KPI's) should be identified to meet the objectives of a utility. The set objectives should in turn meet the short and long term strategies of a utility and that will assist in building a Balanced Scorecard (BSC) for a utility.

Mugabi *et al.* (2006:1) provides motivation for strategic planning as a principle that utilities can use to set a long term direction based on sound predictions, analysis of options and making key decisions about the future of an organisation.

To truly comprehend the efficacy of a BSC, it must be understood that an organisational strategy should be at the centre of every business process thus presenting the BSC as a strategic management instrument of choice (Pangarkar & Kirkwood, 2008:95).

The BSC framework is perhaps the most widely used tool for balancing financial performance indicators with other key success factors. This approach contends that a company should not only measure financial performance but also fundamental drivers associated with financial performance such as operational excellence, relationship with customers, and learning and growth (Sahu & Mookherje, 2008:62).

The above view is also expressed by Rohm (2009:1) that a BSC is a performance management system that can be used to align the vision and mission of any organisation with customer requirements, manage and evaluate business strategy, monitor operation efficiency improvement, build organisation capacity, and communicate progress to all employees.

In a BSC language, vision, mission and strategy at the corporate level are decomposed into various perspectives as seen by the owners of a business and other stakeholders being: customer, financial, internal business processes and the learning and growth (Rohm, 2009:2).

Rohm (2009:3) further cites that the BSC framework can be applied to a public organisation in as much as it is applied in a private organisation. The essence of a BSC in a public organisation is that it must capture a mission-driven nature of a public

organisation such that there is a delivery of necessary, cost-effective services for citizens as contrasted to a primary desired outcome of profitability for private organisations.

Strategic planning processes needs to be flexible and adapt to any changes. Keeping a strategic plan up to date requires a system evaluation of a continuous nature, which is efficient in such a way that the relationships will be established between the objectives of strategic planning and the development of competencies at the operational level. The BSC can achieve that, as it is a measurement model that assists the company to achieve the operational performance objectives based on the strategy (Goncalves, 2009:463).

The BSC also establishes performance indicators and evaluation tools which might permit a comparison between the expected performance and that obtained so as to verify the efficiency and effectiveness of strategies adopted (Goncalves, 2009:464).

## 1.2 Problem statement

Hassamein and Khalifa (2007:479), indicates that both developed and developing countries are keen to improve the performance of their water utilities and this growing concern has prompted institutions such as the World Bank to identify problems that hinder the performance of water utilities, and further stated that many public utilities in developing countries are characterised by high costs, low efficiency and unreliability.

Mugabi *et al.* (2007:1) further indicate that the public water utilities in developing countries face colossal challenges to meet the water needs of their growing urban populations and have further identified a number of management issues that apply to water utilities irrespective of their size, organisational culture and operating environment, which can be summarised as follows:

- **Revenue management inefficiencies:** Inadequate cost recovery as revenues generated are insufficient to cover operating costs as a result of lost production and lack of commercial orientation in running the business and inappropriate tariff regimes.
- **Management information systems:** Lack of effective management information systems to allow for adequate performance monitoring and evaluation. Most

utilities rarely collect data in a systematic way to enable them to assess their performance to design operational improvements.

- **Generic utility management:** Lack of clearly articulated vision or mission statements, sound management structures and human resource capacity to enable them to deliver on their mandate.

In addition to the above, Hassamein and Khalifa (2007:479) indicate that inappropriate tariff structures and staffing issues are the two most important obstacles facing public utilities, thus straining them with inefficiencies and poor performance.

In accordance to Atkinson (2006:1441), the BSC is arguably a dominant framework in performance management and has been offered by its inventors as a cornerstone of a strategic management instrument, positively linking an organisation's long term strategic intentions with its short term operational goals.

Ireland *et al.* (2011) express that the BSC is a framework that firms can use to verify that they have established both strategic and financial controls to assess their performance.

In view of the challenges, strategic management and the BSC imperatives outlined above, the following research questions will thus be explored within the WB.

- Are there any synergies that could be achieved between strategic management models and the BSC?
- To what extent could the BSC be considered as an instrument in performance and strategic management?
- How can the literature on strategic management and the BSC be merged to understand if and how the BSC could be utilised as an appropriate instrument for strategic management?

## **1.3 Research objectives**

### **1.3.1 Main objective**

The main objective of the study is to investigate appropriateness of a BSC as a strategic management instrument to measure performance in the WB.

### **1.3.2 Secondary objectives**

A literature review was performed to study:

- Strategic management as a concept,
- BSC and its perspectives,
- Performance management and balanced performance measures,
- A link between the BSC and strategic management,
- Strategy and performance management within the public sector,
- Strategy and performance management within the WB sector.

An empirical study was performed to:

- Understand if implementation of strategy within the WB could be addressed through the usage of a BSC,
- Evaluate if the BSC through its balanced performance measures can be a vital strategic management instrument for the WB,
- Study the current strategic management models within the WB and if the BSC could be central to them,

- Identify conceptual convergence between the literature on strategic management and the BSC,
- Conduct a statistical analysis of the results,
- Make conclusions and recommendations.

## **1.4 Research method**

### **1.4.1 Literature study**

The literature study took a form of academic journals that are published and are peer reviewed, books and magazines sourced from the Internet and the library. A study covered literature on key concepts, being strategic management, a BSC, performance management, a BSC and its link to strategic management, strategy and performance management within the public sector as well as strategy and performance management within the WB.

### **1.4.2 Empirical study**

The research was conducted in a quantitative form using a Likert scale questionnaire that incorporated all the important aspects relating to the BSC and strategic management. The study population comprised of executive to junior managers within the WB. Collected data was populated and analysed using statistical analysis tools and the results presented. The results were used to derive conclusions from which a set of recommendations and conclusions were made.

## **1.5. Study limitations**

The study was limited to the WB sector, and although the WB are situated over the nine provinces, the study is not representative of the entire public sector institutions.

## 1.6 Draft outline of the study

*Chapter one* consists of the nature and scope of the study, including the introduction, research problem and limitations of the study. *Chapter two* consists of the literature review which covers the literature on the key concepts. *Chapter three* consists of the empirical research and results of the investigation whilst *Chapter four* consists of conclusions and recommendations.

## CHAPTER TWO

### LITERATURE REVIEW

*“Without a strategy, an organisation is like a ship without a rudder, going around in circles. It is like a tramp; it has no place to go.” – Joel Ross and Michael Kami*

#### 2.1 Introduction

In today’s world, organisations need to be global, cross functional, keep up with the rapid change in technology, have close relations with customers and suppliers and accept their intellectual capital as an asset. These needs leverage the organisations to create customer-driven, value-added products and services (Asan & Tanyas, 2007:999).

The above notion is also expressed by Rhodes *et al.* (2008:1170) that globalisation, deregulation, technological innovation and high customer expectations continually reshape the global international business landscape and in order to compete successfully, companies require focus, innovation and agility to enable quick change.

In accordance to Agrawal (2008:24), the new economic paradigm is characterised by speed, innovation, quality and customer satisfaction and the very essence of competitive advantage has shifted from tangible assets to intangible ones, thus a requirement by corporates to adopt new approaches for facing competition and achieving business excellence.

David (2011:128) asserts that in a world where the identity of consumers is changing, and the technologies for serving customer requirements are continually evolving, an externally focused orientation does not provide a secure foundation for formulating long-term strategy however, the company’s own resources and capabilities provide a much more stable basis to satisfy the customer requirements.

Henry (2008:4), build on the above that most studies have provided an indication that differences in profitability within industries is much more important than differences in profitability between industries and the reasons being international competition, technological change and diversification of corporates across industry boundaries meaning that industries that were once cosy havens for making easy profits, are now subject to a vigorous competition. The most important debate to be derived is the role of

a strategy to achieve competitive advantage for the organisation that which allows an organisation to meet customer needs better than its rivals. A source of competitive advantage can be derived from a number of factors that among others, includes the organisations' products and/or services, culture, technological know-how and processes.

Although there are many ways to manage, managers are generally burdened with a plethora of management activities and are charged with bureaucracy, short-termism, lack of experience, and failure to adapt to changes. In pursuit of strategic management, managers require a system to develop policies, communicate, allocate resources, focus and align action, control and evaluate corporate performance (Asan & Tanyas, 2007:999).

In accordance to Ireland *et al.* (2011:324), companies jeopardise their future performance possibilities when financial controls are emphasised at the expense of strategic controls as financial controls provide feedback about outcomes achieved from past actions but do not communicate drivers of future performance. Lawrie and Cobbold (2004:611), also express that financial data has limitations if it is to be considered a basis for decision making, and the use of non-financial data in providing for improved decisions has been recognised for a very long time.

Thompson *et al.* (2011:78) asserts that a company's financial performance measures are lagging indicators that reflect the results of past decisions and organisational activities thus past or current financial performance not being a reliable indicator of future prospects. The most reliable leading indicators of a company's future performance and business prospects are strategic outcomes that indicate whether the company's competitiveness and market position are stronger or weaker, thus concluding that achievement of strategic outcomes, or leading indicators enables the company to deliver on competitive advantage. The BSC has been heralded as a performance management approach and a strategic management instrument that measures whether the smaller-scale operational activities of a company are aligned with its larger-scale objectives in terms of vision and strategy. It is a means to evaluate corporate performance from four different perspectives.

This chapter would thus introduce strategic management and its conceptual models. Performance management will also be discussed within the ambits of the BSC. A link

will be provided between strategic management and the BSC as a strategic management instrument. Performance management within the Public Sector and within the WB will also be discussed.

## **2.2 Strategic management**

### **2.2.1 Conceptual framework and definition**

The field of strategic management is a prime example of an academic field which its consensual meaning it is viewed to be fragile and might solicit a wide array of responses as its subjects of interest overlap with several other vigorous fields such as economics, sociology, marketing, finance and psychology. The field has a collective and distinct identity arising from an implicit consensus about its essence even though there is ambiguity about its meaning (Nag *et al.* 2007:935).

The genesis of strategic management is put into context by Mahoney and McGahan (2007:81) on its emergence from the social and administrative sciences during the 1970's, evolving to comprehension of the strategic management principles as the drivers of sustained competitive advantage during the early 1980's.

In accordance to Goldman *et al.* (2010:48), a deliberate approach or an emergent approach to a strategic management process can be adopted. A deliberate approach is viewed rather as a science, where the business environment is seen to be largely objective, open to analysis and predictable to a greater extent where strategic management is a systematic process of environmental, competitive and internal analysis and the organisation's strategy is built on that foundation. The emergent approach is viewed as an art, rather than science as it holds that a strategy should be a creative adaption to environmental challenges where an emphasis is rather placed on a combination of processes, resources and competencies of an organisation to match the needs of a dynamic environment.

David (2011:37) defines strategic management as an art of formulating, implementing, and evaluating cross-functional decisions that enable an organisation to achieve its objectives. Manifestation of cross-functional decision making processes is depicted on

managerial focus of integrating marketing, people, finance, operations, research and development and information systems to achieve organisational success.

Teece *et al.* (1997: 212) maintain that the very essence of the strategic management field is how organisations achieve and sustain a competitive advantage, and makes reference to strategic management paradigms that put an emphasis on internal organisational effectiveness and efficiencies being the Resource Based View (RBV) and dynamic capabilities.

Mansfield and Fourie (2004:37), alludes that the RBV is posited on a notion that resources of an organisation are valuable if they can lead to an increase in revenues and a reduction of costs. Henry (2008:126) indicates that the RBV takes an inside-out approach and emphasise that the internal capabilities of an organisation are taken into cognisance in formulating strategy to achieve competitive advantage, meaning that the internal capabilities determine the strategic choices of an organisation.

The dynamic capabilities paradigm can be viewed as an extension of the RBV where the organisation is conceived as a collection of resources and the competitive advantage originates from the creative integration and exploitation of such resources (Hou, 2008:1256; Lopez, 2005:663). Kong (2008:285) indicates that through dynamic capabilities, an organisation can reconfigure internal and external competencies to cope with the demands of a volatile environment.

The strategic management process is dynamic and ongoing as organisations evolve over time, thus an organisation can incrementally face the challenges and support adaption during the times of radical change (Arndt, 2011:4).

### **2.2.2 Stages of strategic management**

In accordance to David (2011:38), the strategic management process consists of three stages, being formulation, implementation and evaluation. The formulation stage includes developing a vision and mission, identifying external opportunities and threats, determining internal strengths and weaknesses and formulating strategies that will benefit the organisation. The implementation stage is often termed as the “action stage” of strategic management process and requires an organisation to establish annual

objectives, device policies and efficiently allocate resources so that the formulated strategies can be executed. A strategy evaluation is the final stage of the strategic management process where internal and external factors that are bases for current strategies needs to be reviewed, performance is measured and corrective action is taken.

Goldman *et al.* (2010:22), indicates that monitoring and evaluation of strategy is a very critical stage as this ensures that a gap between intended and realised strategies is as small as possible to guarantee successful performance of an organisation. David (2011:327) indicates that a BSC is an important tool during the strategy evaluation stage and enables an organisation to continually improve, create value, determine how competitive advantage is sustained, how core competencies are improved upon and to satisfy the organisation's customers.

### **2.3 Management of strategic performance**

Jusoh and Parnell (2008:7) suggest that traditionally, organisational performance has been measured using financial, market-based and qualitative measures. Financial measures provided objective artefacts of organisational performance and based mainly on accounting data such as Return on Assets (RoA), Return on Equity (RoE) and the contemporary measure being the Economic Value Added (EVA). The market-based measure being a Market Value Added (MVA) was touted as a best indicator to determine if the organisation is creating wealth for the shareholders. Qualitative measures such as ethical standards, customer satisfaction, process improvements, throughput and quality provided a subjective area for performance measurement.

Strategic objectives and performance measures are a starting point prior to development of any strategy map Niven (2008:151) and Mackay (2004:12) indicates that once strategic objectives have been identified, appropriate quantitative measures are devised to monitor the success in achieving such strategic objectives. The table below depicts a generic template of objectives and performance measures per the BSC perspective.

**Figure 2.1:**  
**Objectives and measures per perspective**

Learning & Growth		Internal Business Processes	
Objectives	Measures	Objectives	Measures
'To value our staff'	Employee Retention Index	'To continually challenge competitor products in the market place'	Time to Market for Next Generation of Products
'To maximise productivity'	Output per Head	'To compete on product reliability'	Production Defect Rates
'To develop a skilled workforce'	Number of Training Hours Completed Per Head	'To compete on competitive logistics capabilities'	Stock Replenishment Cycle Times
'To provide internal information'	Information Availability Survey Index	'To compete on product delivery channel mix'	Volumes of Transactions Conducted Through Each of Our Delivery Channels
'To create organisational alignment'	Peer Evaluation Measures Within / Between Teams	'To capture a unique supply chain'	Percentage of Supplier's Revenue Dependent on Us
'To cultivate a core competence in ...'	Skill and Technology Measures Related to Desired Competence	'To reinvent our value creation system'	Benchmarking Index for Supplier of Outsourced Activities
Financial		Customer	
Objectives	Measures	Objectives	Measures
'To achieve a higher return on investment'	ROI, ROCE	'To dominate our major markets'	Market Share
'To see significant revenue from our new product launch'	Revenue Growth on Selected Product Lines	'To delight our targeted customers'	Customer Satisfaction Survey Results
'To maximise profitability per transaction'	Unit Costs	'To increase revenue through repeat purchases'	Customer Retention Over Time
'To minimise our cost of obtaining funds'	Credit Rating	'To grow our business in a selected target group'	Customer Acquisition From Target Group
'To delight our shareholders'	Value Added Measures	'To add margin through image or fashion'	Marketing Spend as a Percentage of Sales
'To improve our cash flow'	Creditor Days	'To build customer recognition'	Corporate Image or Brand Awareness Polls

Source: Mackay, 2004:12

## 2.4 The Balanced Scorecard

### 2.4.1 Conceptual framework and definition

Initially developed in 1992, with the paramount writings of Kaplan and Norton, the BSC was developed as a model that was aimed at translating the vision, mission and strategy of an organisation into objectives, measures in four perspectives being the financial, customer, internal business processes and learning and growth. The BSC was developed to be a strategic framework where all the corporate actions fit together in a cause and effect chain, setting goals and measuring performance and communication of that to provide a clear understanding of the effects of their actions on the vision of an organisation (Asan & Tanyas, 2007:1000).

The writings of Kaplan and Norton in 1992 arose as typically, the measures of performance were primarily and traditionally centred on financial indicators which provided past performance and did not take the future performance into cognisance. The BSC therefore offered an opportunity for the other non-financial performance to be included to provide a holistic view of the organisational performance. The coupling of all these measures (financial and non-financial) is important so that an organisational performance must be taken into consideration, measured and managed as an inter-related single set (Witcher & Chau, 2007:520).

The BSC engenders a longer-term focus on managers and is seen as a tool that can curtail management myopia by putting an emphasis on leading measures in conjunction with lagging measures. Leading measures are considered to be strategic objectives of an organisation as they provide a future strategic trajectory whilst the lagging indicators are financial indicators as they provide an indication of past performance (Tayler, 2010:1112).

An interesting notion is expressed by Kong (2008:287) that the BSC is quite instrumental as a tool for business organisations to convert intangible assets such as corporate culture and employee knowledge into tangible outcomes.

In their study, Rhodes *et al.* (2008:1172) expands on the above notion that divergent elements of high performance, being the organisational intangible assets such as

leadership style, national culture, organisational culture and human resource management practices influence the success of the BSC adoption. In this particular instance, the BSC is posited as an element of convergence through its defining characteristics of strategy maps to describe the business strategy prior to selection of metrics and targets and cascading processes where a corporate plan and strategy are cascaded to align operational decisions and metrics supported by an automated reporting tool. The result of that is a mutual reinforcement of a high performance culture and sustainability of a BSC.

In accordance to Mackay (2004:11), a guiding concept of a BSC is to move away from focusing solely on financial outcomes and to consider a more balanced portfolio of multiple financial and non-financial measures closely linked to strategic objectives as no single performance indicator can succinctly capture the complexity of how an organisation is performing. Managers are encouraged through the BSC to rely on both the lagging and leading indicators and the thrust of the BSC being to measure the strategic and the operational indicators where progress of the organisation in implementing and measuring its strategy can be measured.

#### **2.4.2 Evolution of the Balanced Scorecard**

Lawrie and Cobbold (2004:615) in their study provided a transition from a first generation to a third generation BSC. The first generation scorecard neither intended for companies to perform a comprehensive strategic analysis nor examine their customer value propositions but was best suited to situations where the organisation could communicate the metrics that were important to the organisation for moving forward (Rhodes *et al.* 2008:1172).

Lawrie and Cobbold (2004:615), indicated that the second generation scorecards presented a major shift from the first generation scorecard with the fundamental being that measures were chosen to relate to specific strategic objectives, and an attempt was made to visually document the major causal relationships between strategic objectives, laying out the results in a “strategic linkage model” or “strategy maps” diagrams.

The third generation scorecards were a refinement to a second generation scorecard with the new features that were intended to provide better functionality and more

strategic relevance. The most conspicuous feature of the third generation scorecard is the strategic linkage model with activity and outcome perspectives. The activity perspective combined both the learning and growth and processes perspectives, when the outcomes perspective combined both customer and finance perspectives (Lawrie and Cobbold, 2004:616).

Mackay (2004:18) expands on the above that learning and growth and processes perspectives are referred to as outcome measures because they describe the results of past actions and activities already performed, whilst the customer and finance perspectives are referred to as performance drivers because they represent hypotheses about actions that will influence future results.

### 2.4.3 BSC perspectives

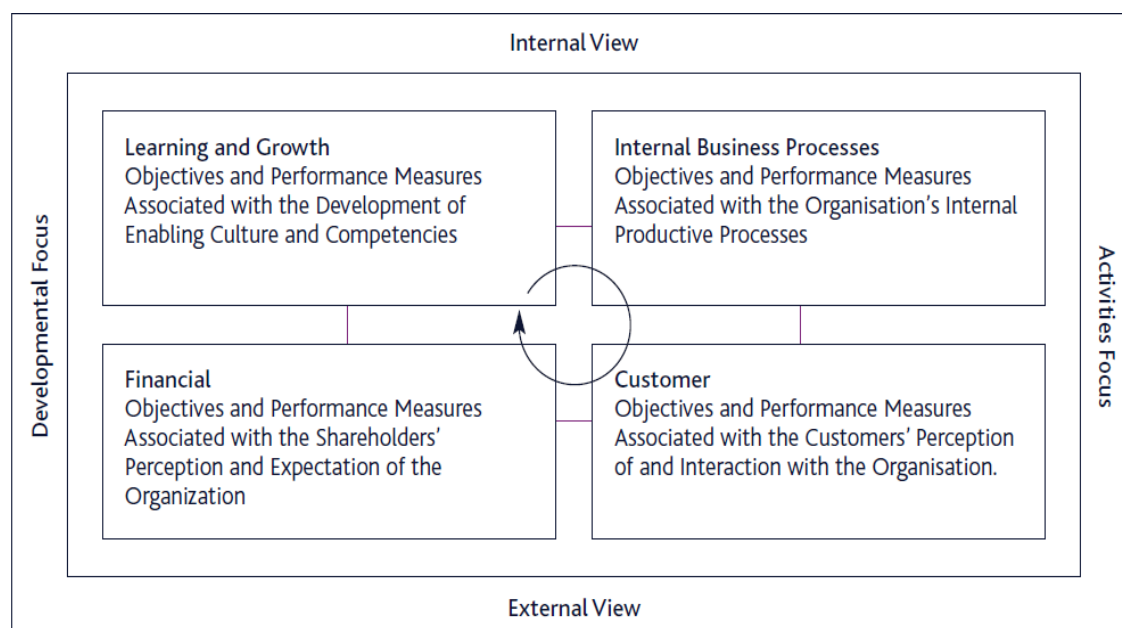
A BSC is founded on the four perspectives being, Finance, Customer, Processes and Learning and Growth, which are succinctly defined by Hamzah *et al.* (2011:1570) as follows:

- **Financial perspective:** The main purpose of the financial perspective is to serve the shareholders well, and provides the ultimate outcome or the bottom-line improvements of an organisation by measuring the economic consequences of actions already taken in the learning and growth, processes and customer perspectives.
- **Customer perspective:** This perspective provides for the business processes to be employed by the organisation to service customers in order to improve the financial outcomes. This perspective captures the ability of an organisation in delivering quality products and services to the customers.
- **Internal processes perspective:** There are internal business processes that an organisation must focus on, and carry out very well to add value through product designs and efficiencies, and this is the very essence of this perspective.
- **Learning and growth perspective:** This perspective touches on the people side of the organisation and the prevailing organisational culture and climate. It also

focuses on leadership issues and how the organisation paces itself to deliver value to customers.

Mackay (2004:11) depicts the scorecard perspectives where the learning and growth and processes perspective is posited as activities, and taking an internal view of an organisation and the performance drivers, being the financial and customer perspectives having a developmental focus with an external view of the organisation.

**Figure 2.2:**  
**The Balanced Scorecard quadrants**



Source: Mackay, 2004:11

Kaplan and Norton (2005:2) mentions that strategy maps and the BSC can be used to describe and implement the enterprise value proposition, that which actually defines the corporate strategy and can be derived per BSC perspective through the enterprise derived values. A postulation made is therefore, that a value creation strategy is constructed when the customer value proposition is combined with the enterprise value proposition.

Kaplan (2010:27) builds on the above that the BSC could be utilised for organisational value enhancement by creation of the enterprise value proposition along the four perspectives as indicated underneath:

**Figure 2.3:**

**Sources of enterprise synergy**

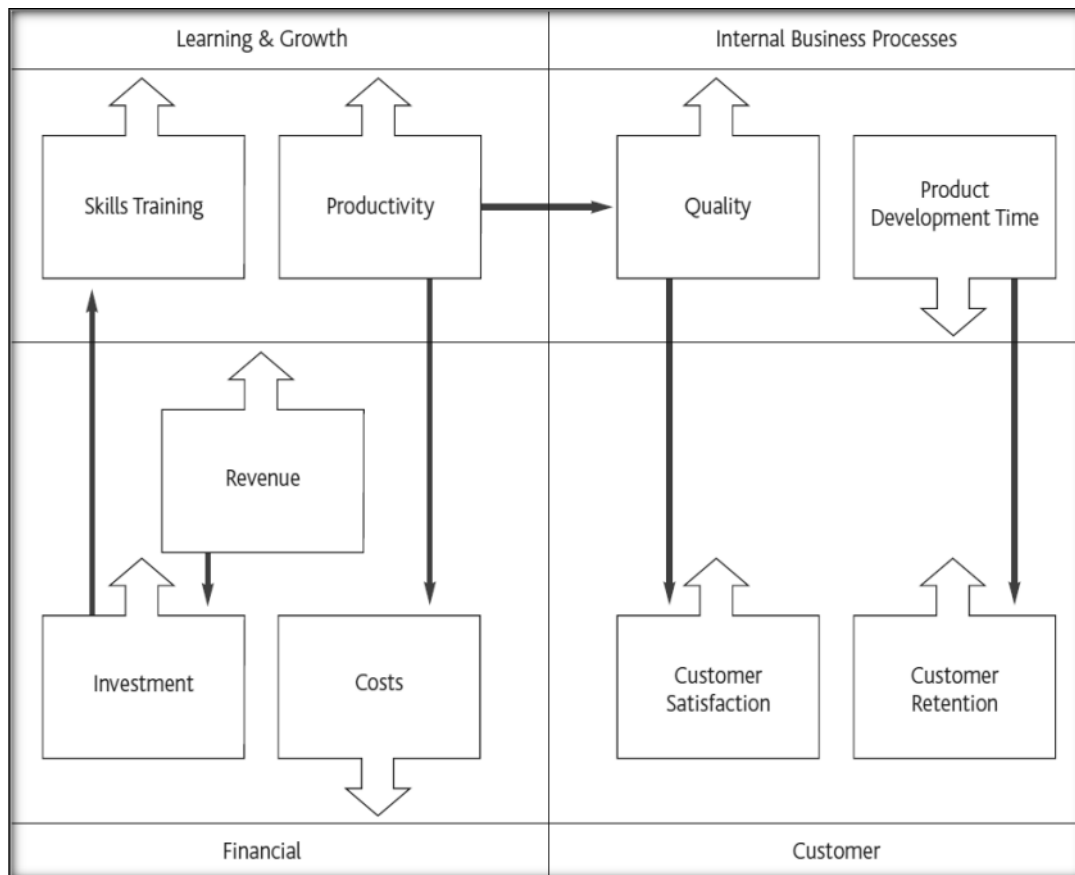
<b>Balanced Score Card</b>	<b>Sources of Enterprise derived value</b>
<b>Financial perspective</b>	<ul style="list-style-type: none"><li>- Create synergies through effective management of internal capital.</li><li>- Integrate a diverse set of businesses around a single brand, creating common values or themes.</li></ul>
<b>Customer perspective</b>	<ul style="list-style-type: none"><li>- Create value by cross selling a broad range of products.</li><li>- Create a consistent buying experience conforming to corporate standards.</li></ul>
<b>Internal processes perspective</b>	<ul style="list-style-type: none"><li>- Create economies of scale by sharing systems, facilities and personnel in critical support processes.</li><li>- Create value by integrating contiguous processes in the industry value chain.</li></ul>
<b>Learning and growth perspective</b>	<ul style="list-style-type: none"><li>- Share competency around development of human, information and organisation capital.</li><li>- Provide leadership in complex organisations through the management of strategic themes.</li></ul>

Source: Kaplan, 2010:27

#### **2.4.4 Cascading process and causality**

Each scorecard perspective reflects a key focus and measures in each perspective should be selected in such a way there are no perverse measures but should relate to each other. A hypothetical relationship through “cause and effect” is created through causality resulting in the financial perspective being a determinant of the pace at which a strategic change can take place (Mackay, 2004:19). A hypothetical linkage between the BSC perspectives is presented below.

**Figure 2.4:**  
**Hypothetical linkage between BSC measures**



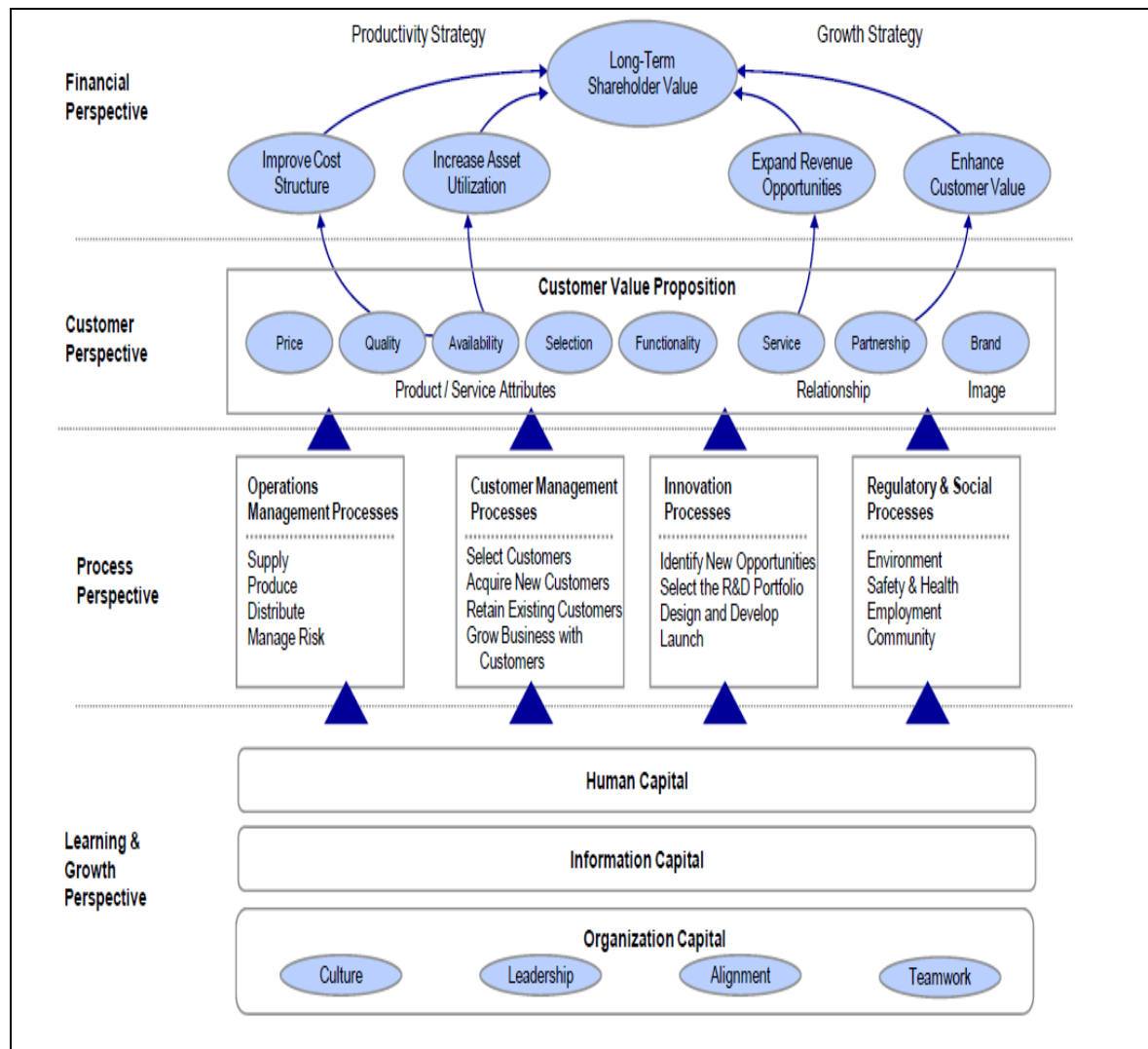
Source: Mackay, 2004:19

Rhodes *et al.* (2008:1173) indicates that the BSC is most effective when it cascaded to operational activities and aligns the efforts of everyone in an organisation. The cascading process enables the line-of-sight from operational activities to the organisations strategic direction and it is essential to operationalise corporate level strategy within the whole organisation.

The cascading process occurs through strategy maps that emphasises causality across the four perspectives and that enhances value creation through collaboration across the organisation and create a case on how the scorecard could articulate the role for a corporate strategy (Kaplan, 2010:26).

The cascading and causality effect is shown below, with the strategy maps that link intangible assets and processes to customer value proposition and the financial outcomes.

**Figure 2.5:**  
**Strategy maps**



Source: Kaplan, 2010:22

Kaplan *et al.* (2010:116) alluded to the fact that a strategy map brings together all of the company's strategic objectives to illustrate causal linkages and allow managers to have a view of how attaining objectives at the learning and growth level helps the organisations' employees to execute the business processes that deliver customer value to achieve financial returns which ultimately drive a long term value to the shareholders.

Niven (2008:151) indicates that a strategy map provides a series of linked hypotheses to provide a movement of an organisation to a future desirable yet unknown strategic position, and such a strategy map specifies a cause and effect relationships making them explicit and testable. Objectives comprise a strategy map and are a quantitative means by which strategic success will be gauged. Objectives also indicate what must be done in

order to effectively implement the strategy as they are more specific and translate strategic priorities that are often vague and nebulous into directional and action-oriented statements of what should be done to execute strategy. Once objectives have been set, they can be translated into more granular performance measures.

## **2.5 Balanced Scorecard as a link to strategic management**

Punniyamoothly and Murali (2008:421) cite that there are four barriers to strategic implementation, being:

- Vision barrier as no one in the organisation understands the strategies of the organisation,
- People barrier as most of the people do not have objectives that are linked and aligned to the strategy of an organisation,
- Resource barrier as time, energy and money are not allocated to those things that are critical to the organisation, for instance where the budget is not linked to the strategy, and
- Management barrier where management spend too little time on strategy and too much time on short-term tactical decision making.

The observations made above clearly require not only proficiency in formulating effective strategies but also organisational objectives and goals that are relevant to the changing environment. This however, is an indication that effective formulation will not suffice, but effective implementation through translation of strategic intentions into strategic actions is required (Punniyamoothly & Murali, 2008:422).

As indicated throughout this text, the BSC has been heralded as such tool, that which translates strategic intentions into strategic actions. Kaplan (2010: 24) indicates that the BSC is quite an interactive system that has the following characteristics:

- Information provided by the BSC is an important and recurring agenda item to be addressed by the highest levers of management,

- The interactive system requires frequent and regular attention from operating managers at all levels of the organisation,
- The BSC is a catalyst for continual challenge,
- Data generated by the BSC can easily be interpreted and discussed during face to face meetings of superiors, subordinates and peers.

The above characteristics posit the BSC as indeed, a cornerstone of managerial system for strategy execution.

The RBV fits in well with the activities perspective of the BSC. Mackay (2004: 18) solidify this notion that issues such as human capital, information capital and employee skills that are within the learning and growth perspective, coupled with operational processes and improvements and supply chain management within the processes perspective as constituting the intangible and tangible assets, are actually core competencies that are resident within an organisation and can be leveraged upon to create a disproportionate contribution to the customer-perceived value.

In accordance to Witcher and Chau (2007:523), strategic management incorporate the company's business model, which is a statement of critical core competencies that have to be managed effectively to achieve the long term purpose of the company. Core competencies can thus be defined as a long-term critical success factor, a strategic risk statement and/or a value chain that includes primary and secondary activities that create customer value and ultimately competitive advantage.

The above views fit well into the activities perspective where a third generation BSC is optionally adopted (Lawrie and Cobbold, 2004:618; Mackay 2004:18).

Sensing capabilities as identified by Hou (2008:1258) can be achieved through the customer perspective of the BSC where the interface is created with the customer through needs identification to re-engineer business processes. The customer interface also provides opportunities by offering an insight into the current and future markets (Mackay, 2004:16), whilst absorptive capabilities as alluded to by Hou (2008:1256) can

be attained through the learning and growth perspective as it deals with strategic investment in information systems that will enable organisational processes (Mackay, 2004:17).

Integrative and innovative capabilities as indicated by Hou (2008:1258) are attained through the dynamic nature of tangible and intangible assets (represented by the learning and growth and the processes perspective of the BSC) as they are referred to as performance drivers which suggest a link between those performance drivers with organisational value creation through strategy mapping and success maps as pioneered by Kaplan and Norton; and Neely respectively (Marr, 2005:147).

To build on the above discussion about the integrative and innovative capabilities as alluded to by Hou (2008:1258), Marr *et al.* (2004:317) indicates that an organisation consists of a bundle of assets in which various tangible and intangible assets depend on each other to create value, thus emphasising inter-connectivity of assets in creating strategic value.

Organisational paths and processes as identified by Schreyogg and Kliesch-Eberl (2007:921) are regarded as organisational assets because they involve practices and routines. Production processes are viewed as capital assets whilst the organisation's routines, transmission of information, practices, informal procedures and tacit routines that determine how the information within the organisation flows as intangible assets, thus forming part of the performance drivers perspective of the BSC (Marr *et al.* 2004:316).

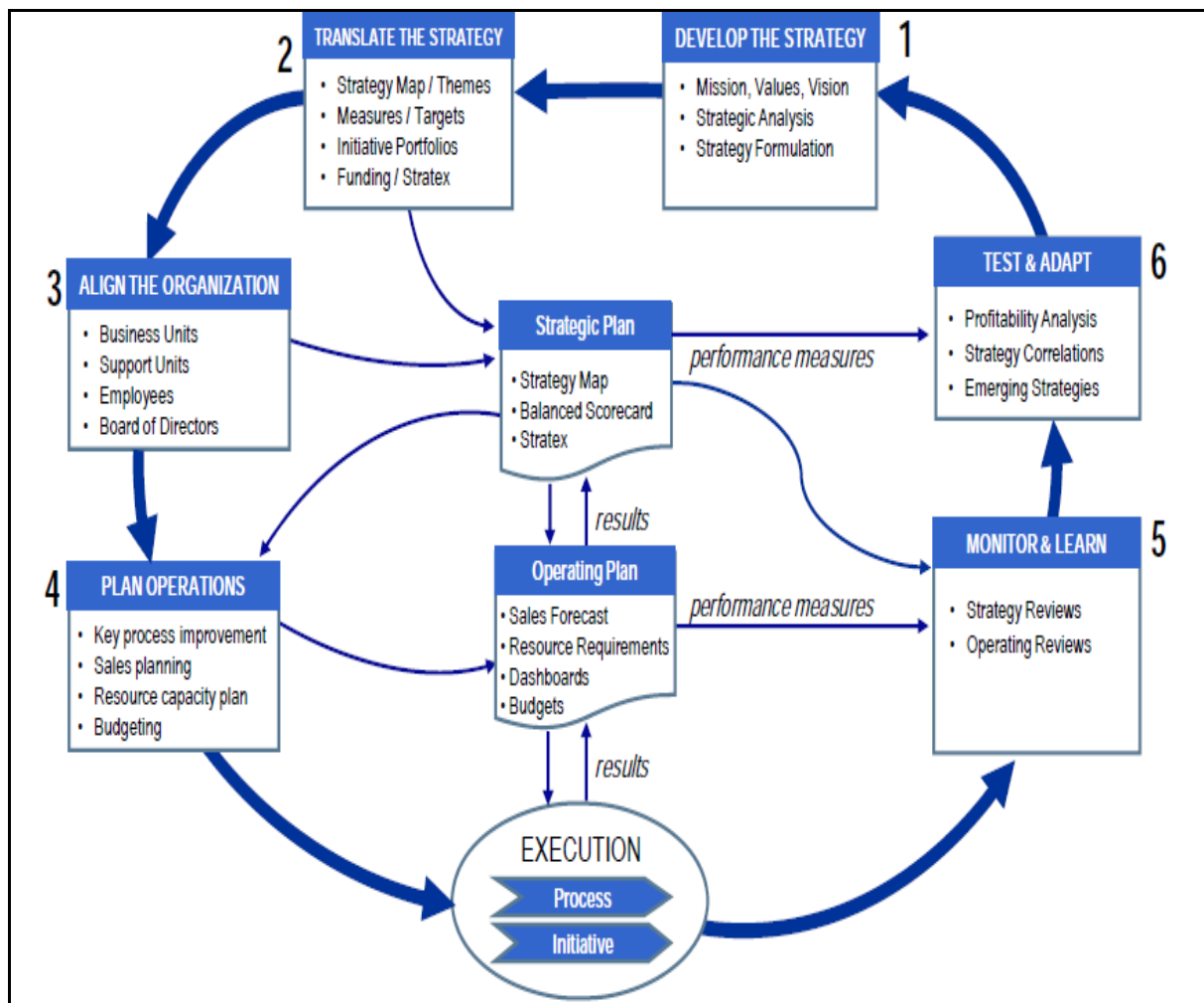
Arndt (2011:2) indicates that dynamic capabilities play a critical role in the strategy management process of the organisation as it configures the resource base of the organisation with the external environmental demands.

The BSC is thus a dynamic capability as it has the internal and external view of the organisation, taking the activity and developmental focus into account. Key considerations of the BSC then become less of, "what have we achieved?" and more of, "what are we likely to achieve in the future?" and this in itself presents a shift in focus from operational activity to a strategic guidance which is crucial as the external

competitive environment has become more dynamic and the internal organisational structures has become more fluid and complex (Mackay, 2004:11).

Kaplan (2010:24) makes specific reference to a comprehensive six stage closed-loop strategic management system that links strategic planning with operational execution with the BSC at the centre and is presented and discussed below:

**Figure 2.6:**  
**A closed loop Management system for Strategy execution**



Source: Kaplan, 2010:28

### Stage one: Develop the strategy

The management system commence with the articulation of the company's strategy where the vision (company's purpose and desired future state), mission (aspiration for

future results) and values (internal compass to guide the company's future actions) are discussed (Kaplan & Norton, 2008:2).

In accordance to Kaplan and Norton (2008:5) when the vision, mission and values of an organisation have been set, managers would then undertake a strategic analysis of the internal and the external environment of an organisation.

### **Stage 2: Translate the strategy**

Once the strategy has been formulated, it needs to be translated into objectives and measures that can be clearly communicated throughout the organisation and one such way of doing that is the strategy maps to visualise the strategy as a chain of cause and effect relationship among strategic objectives (Kaplan & Norton, 2008:6).

### **Stage 3: Align the organisation**

When the strategy has been translated into strategy maps, various business units' scorecards would be prepared to inform the performance of various managers and employees. This would then turn out that the approach would as well be bottom-up where the employee performance would affect the performance of the business unit, with resultant performance of the organisation in its entirety (Kaplan & Norton, 2008:6).

### **Stage 4: Plan operations**

With strategic objectives, targets, metrics and divisional portfolios in place the operational plan that lays out actions to achieve strategic objectives is put in place. This would involve setting priorities for focused process improvements, preparing detailed plans in terms of capacity, followed by operational and capital budgets. At this point in time, the organisation has completed the stages of strategy formulation to allocation of resources, with movement to the stage of execution (Kaplan & Norton, 2008:7).

### **Stage 5: Monitor and learn**

As implementation of strategy is ensuing, Kaplan and Norton (2008:11) suggest that three types of meetings should be held by the executives, being a meeting to review

performance of operating departments, the other to review business functions, and a strategy management meeting to review the BSC performance indicators and initiatives to assess progress and identify barriers to strategy execution.

### **Stage 6: Test and adapt**

In accordance to Kaplan and Norton (2008:14), from time to time, it will be learnt that the assumptions that underpinned the strategy were flawed and obsolete thus a requirement to rigorously re-examine the strategy and adapt it. Adaptions will either be incremental or a completely new transformational strategy will be required. This will actually be a resemblance of the deliberate, emergent and realised strategies concept where deliberate strategies not realised are dropped.

The above steps are more than just about the BSC but embed the whole BSC as a component that is central to the comprehensive strategic management system to integrate strategy and operations. The closed-loop management system has a number of inter-relationships and requires simultaneous coordination among organisational line and staff units. The closed loop management system modifies and co-ordinate various parts of the organisation to create strategic alignment (Kaplan, 2010:29).

## **2.6 Strategy and performance management within the Public Sector**

Fryer *et al.* (2007:499) allude to the fact that boundaries between the public and the private sector are blurred and that there is a constant flow and ebb between private and public sector organisations due to an overlap in most areas. The following distinctions are however noted:

- Whilst there are financial controls and targets, the primary goal in the public sector is not profit maximisation,
- The public sector has got a myriad of stakeholders to serve some of whom are customers as well,
- Public sector organisations suffer from a lack of clarity of who their customers are,

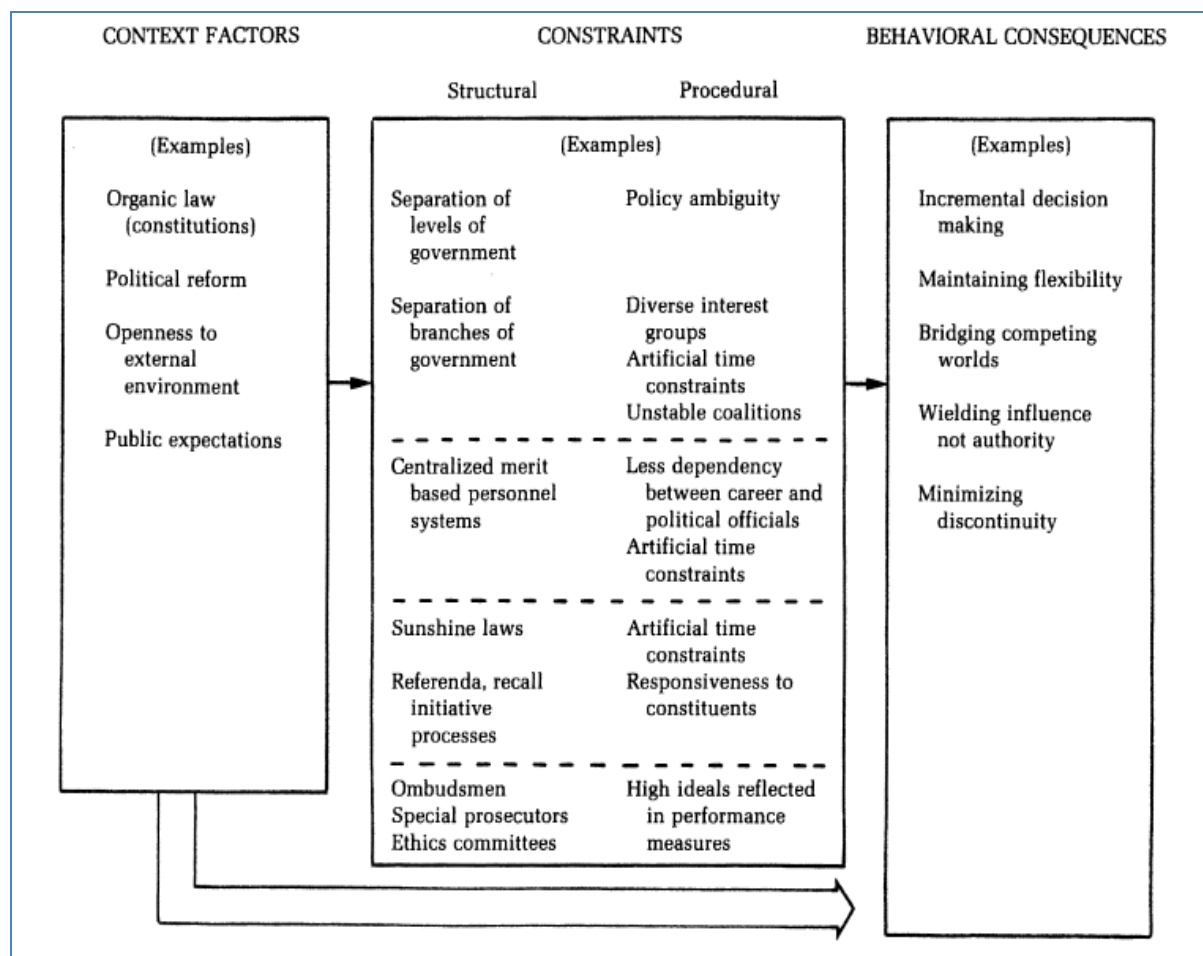
- Public sector organisations have got three distinct domains being the policy, managerial and professional, all of which are distinct in their mores, working patterns and at times in conflict with each other.

Public organisations are faced with an enormous challenge of “doing more with less”, as a result of scarce and limited resources. Increasing competitiveness in many sectors, place a requirement on public sector organisations to remain competitive due to stakeholders’ expectations of continuous improvements and high standards of quality. Delivery of best value is expected, with calls for transparency and accountability thus having continuous improvements as a matter of strategic imperative (Fryer *et al.*, 2007:500).

Drumax and Goethals (2007:648) indicate that strategic management processes within the public sector is typified by institutional, legal and political contexts whilst Ring and Perry (1985:278) proposed the model indicating the context factors, constraints and behavioural consequences influencing strategic management in the public sector.

**Figure 2.7:**

**Illustrative factors involved in influencing Strategic Management in the Public Sector**



Source: Ring & Perry, 1985:278

Nutt (2005:293) indicates that due to defined and stipulated service areas, public sector institutions are prohibited from competing but rather co-operate with organisations that offer similar services and collaborate at an inter-governmental level, and whilst their customers are not grown through marketing, strategic management within the public sector is thus characterised by collaborations and co-operation.

Other factors characterising strategic management within the public sector as identified by Nutt (2005:293) is the intelligence data which is often missing and hard to collect thus providing less clarity about options to be considered when engaging in strategic decision making. The prospect of scrutiny are often a key factor in public sector strategic management processes as decisions have to be made in the presence of various interest groups and making strategic choices to be subject to review and interpretation by outsiders (Nutt, 2005:294).

Politics are often ambiguous and given that ambiguity, strategic management in the public sector therefore ends up being an emergent process with flexibility and adaption being of primary importance and not strict adherence to the rules and conformity with standardised objectives and processes (Drumax & Goethals (2007:650). In accordance to Nutt (2005:293), the external environment within which the public sector operates is littered with political considerations where views of opinion leaders, outright manipulation by legislators and interest groups tend to be given more consideration than economic issues whilst reciprocity and disagreements are ingredients in decision making and bargaining is an important element required to find the permissible arena of action.

To define policy ambiguity within the public sector, Ring and Perry (1985:277) indicates that the general management functions of the government are constitutionally spread out with more than one legislative body and with a variety of judiciaries with a purpose of preventing arbitrary exercise of power which often result in vagueness of objectives that must be strategically managed. Nutt (2005:294) agrees with the latter sentiment that the demands made by interest groups, flux in missions and manipulation by important stakeholders create a confusing and complex set of expectations.

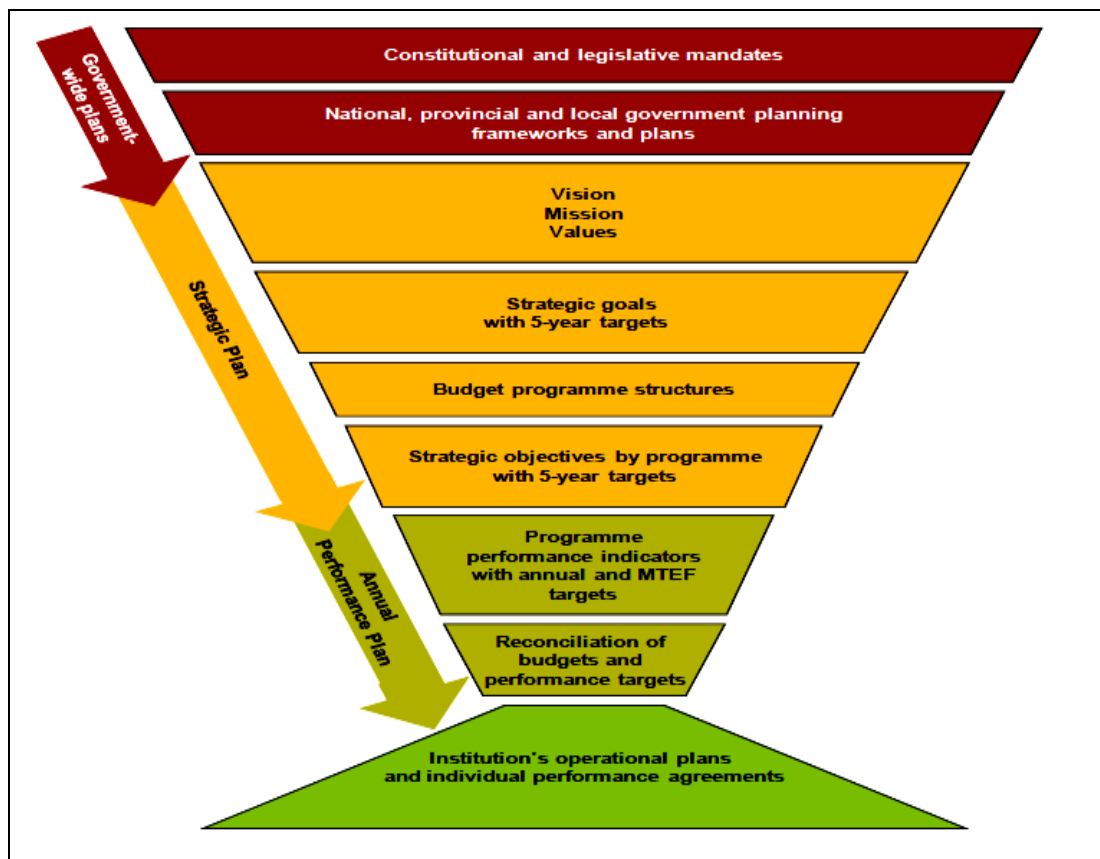
In accordance to Try and Radnor (2007:656), governments have engaged in various reforms and initiatives in order to improve cost effectiveness and efficiency, to improve the quality of public life, become results orientated and citizen centred and put an emphasis on strategic management and business planning and this saw a paradigm shift to adopt the strategic management instruments normally utilised in the private sector thus the Results Based Management (RBM) being a concept for accountability incorporating results into the programme accountability. Within the South African public sector context, a RBM approach to strategic management is advocated as there has been a shift of government to outcomes orientated monitoring and evaluation approach (National Treasury, 2010:1).

In accordance to National Treasury (2010:1), the RBM is a life-cycle approach to management that integrates strategy, people, resources, processes and measurements to improve decision-making, transparency and accountability where the focus is on achieving outcomes, implementing performance measurement, learning from

experiences to adapt and reporting on performance through the development and reporting on financial and non-financial information.

**Figure 2.8:**

**Hierarchy of relationships between planning concepts**



Source: National Treasury, 2010:13

The above diagram depicts the hierarchy of strategic management within the public sector in South Africa, indicating that governments and entities in performing their business actually carry out government-wide plans enshrined in constitutional and legislative mandates and wider government planning frameworks and plans (National Treasury, 2010:13). Constitutional and legislative mandates are then translated into a strategy where in turn, annual performance plans are developed to measure individual performance which is aligned to performance of the entire governmental organisation (National Treasury, 2010:13).

## **2.7 Strategy and performance management within the Water Boards sector**

The United States Environmental Protection Agency (2008:1) alluded to the fact that effective utility management can help water and waste water utilities enhance the

stewardship of their infrastructure, improve performance in many critical areas and respond to current and future challenges thus presenting a need for WB in South Africa to be managed through strategic concepts in order to keep up with developments, meet demands and keep up with change.

Guerrini *et al.* (2010:545), indicated that the main models that were adopted in performance evaluation of the water and waste water utilities are those that are formed into various Key Performance Indicators (KPI) and organised into a report, and those with an overall performance indicator that synthesises in a single score the trend in a group of measures by adopting mathematical methods.

As far as the water utility sector is concerned, a model that is helpful for analytical observation of utility performance is proposed by Guerrini *et al.* (2010:545) and is termed “water scorecard”, formed into four areas being efficiency of investments, efficiency of operations and maintenance, financial sustainability and responsiveness to customers, where each area has a few performance indicators.

The United States Environmental Protection Agency (2008:3) has identified ten attributes of effectively managed water sector utilities, which provides a useful and concise reference for water and wastewater utility managers seeking to improve organisation-wide performance as follows:

**Figure 2.9:**

**Ten attributes of effectively managed water sector utilities**

<b>Attribute</b>	<b>Attribute components</b>
Product Quality	- Comply with regulatory requirements consistent with ecological needs.
Customer Satisfaction	- Provision of reliable, responsive and affordable services.
Employee Leadership Development	- Recruitment and retention of competent staff with continual learning and improvement.
Operational Optimisation	- Timely adoption of operational and technology improvements.
Financial Viability	- Effective balance between debt and asset values at adequate tariffs.
Infrastructure Stability	- Maintain and enhance assets over a long term through a lowest possible life-cycle cost.
Operational Resiliency	- Proactive establishment of tolerance levels and effective risk management.
Community Sustainability	- Maintain and enhance ecological and community sustainability.
Water Resource Adequacy	- Ensure water availability through long term resource supply and demand.
Stakeholder Understanding and Support	- Active involvement of stakeholders and regulatory bodies in decision making.

Adapted from: US Environmental Protection Agency, 2008:18

In accordance to the United States Environmental Protection Agency (2008: 8), the Plan-Do-Check-Act (PDCA) framework, referred to as a Continual Improvement Management Framework, can play a central role in effective utility management and is critical to achievement and making progress on the ten attributes mentioned above.

The PDCA framework is also viewed as a systematic approach that integrates the entire organisations' daily activities with its strategic goals and perceives strategic management

as a process, and actually implements the process control activities to strategic management (Asan & Tanyas, 2007:1002).

Continual improvements or hoshin kanri targets are expressed in Quality, Costs, Delivery and Education (QCDE). Quality relates to customer, Costs to finance, Delivery to business processes and Education to human resource development (Witcher *et al.* 2008: 545), whilst Witcher and Chau (2007:521) indicates that when utilised in combination, the BSC and the hoshin kanri are high order dynamic capabilities because they provide an organisation with an ability to manage and influence strategic management activities, where the BSC provides a long term component of strategic management when the hoshin kanri provides a translation of corporate strategy into short term components across the functional areas of the organisation.

## **2.8 Conclusion**

The first part of this chapter reviewed the literature on strategic management by focusing on the conceptual meaning of strategic management and various phases involved therein. Various strategic paradigms, being the RBV and the dynamic capabilities were also discussed and the BSC was introduced as an effective instrument during the strategy evaluation phase.

The second part reviewed the literature on the BSC, conceptual framework thereof and performance management. The four quadrants of the BSC were discussed and how the BSC is central to the strategic management process of any organisation through strategy mapping and the closed loop strategic management model.

Strategic and performance management within the public sector was discussed, which was then honed further to strategic management and performance management within the WB sector. Various strategic management and performance management tools within the public sector were explored.

The BSC fits into the RBV due to its activities perspective is then posited as a dynamic capability that is central to the strategic management process as it provides the organisation with the ability to influence strategic management activities and improvements made over a period of time through a process of continuous learning.

## CHAPTER THREE

### EMPIRICAL RESEARCH AND RESULTS

*“whenever you can, count” – Sir Francis Galton*

#### 3.1 Introduction

Research is a process that involves obtaining scientific knowledge by means of various objective methods and procedures where the term objective, indicates that these methods and procedures do not rely on personal feelings or opinions. Such methods include procedures for drawing a sample, measuring variables, collecting information and analysing this information (Welman *et al.* 2010:2)

Whilst Dane (2011:3) indicates that it is not easy to arrive at a single definition of research, and just as everyone who has written about research has offered one or another definition, the author defines research as a critical process for asking and attempting to answer questions about the world and further indicates that through research as a tool, an attempt is made to achieve Bartley’s state of maximum criticism by not only pointing at negative qualities of a particular programme, but by examining all of its qualities, good, bad or indifferent.

Walliman (2011:15) describe research as a process of acquiring knowledge and developing an understanding, collecting facts and interpreting them to build up a picture of the world on the basis that a view of knowledge is dependent on the philosophical stances that are maintained by an individual to the next.

Welman *et al.* (2010:22) indicates that the purpose of research is to describe how things are, why things are the way they are and to predict phenomena.

The purpose of this chapter would be thus three-fold, firstly to explore various research paradigms, secondly the research paradigm and instrument used and lastly to discuss and interpret the results of the empirical study conducted. On the basis of the literature covered, and in line with the research objectives, a link between the theoretical aspects of a BSC and the empirical work performed could be provided.

#### 3.2 Research paradigms

Welman *et al.* (2010:6) indicates that there are two main approaches to research, being the positivist approach which is based on the philosophical approach known as logical

positivism and underlies the natural-scientific method in human behavioural research and holds that research should be limited to what can be observed and measured objectively.

The other approach is known as the anti-positivist approach which bears resistance to upholding of the natural scientific approach as the norm in human behavioural research. In accordance to the anti-positivist approach, it is inappropriate to follow a strict natural scientific approach which is believed to have been designed to study molecules and organisms and is therefore not relevant to human phenomena being studied in the human behavioural sciences (Welman *et al.* 2010:6).

### **3.3 Quantitative research**

In accordance to Welman *et al.* (2010:8), quantitative research methods follow a positivist approach and do not involve the investigation of processes but put an emphasis on the measurement and analysis of causal relationships between variables within a value-free context. The purpose of quantitative research design is thus to evaluate objective data consisting of numbers using a process of analysis that is based on complex structured methods to confirm or disprove hypothesis.

Creswell (2009:16) defines a quantitative research approach as that which a researcher tests a theory by specifying a narrow hypothesis and data is collected to either support or refute the hypothesis. An experimental design is used in which attitudes are assessed both before and after an experimental treatment. A measuring instrument that measures attitudes is used and such information lays a basis for analysis using statistical procedures and hypothesis testing.

Welman *et al.* (2010:9), indicates that a quantitative approach provides an outsider's perspective to the research process whilst an objective view of the research process is maintained to keep the research process hypothetically free from bias resulting in a stable process as the process of research is controlled and structured to identify and isolate variables. The focus of results in a quantitative study is reliability as large samples are dealt with and analysis of results is based on statistical significance.

### **3.4 Research method**

A lot of studies have been conducted on the BSC therefore, a positivist method with a quantitative research paradigm where a sample of subjects is drawn from the population and studied is used to derive generalisation about the population. An objective would be

to provide a numeric description of trends, attitudes, and opinions about a population (Creswell, 2009:145).

### **3.4.1 Measuring instrument**

The measuring instrument used is a Likert scale questionnaire, or rather called a summative scale reflecting items that are arranged in a continuum with extreme positions at each end-point (Graziano & Raulin, 2004:312). The closed questions with a selection of a relevant response were used within a graphic form labelled with a version of either "1=agree" or "5=strongly disagree" (Dane, 2011:152).

The objective of a questionnaire is to identify the current strategic management instruments within the WB sector and the effectiveness of such instruments. The questionnaire also sought to understand the conceptual convergence between the BSC and strategic management models, taking the balanced performance measures into cognisance and specific aspects relating to the four perspectives of the BSC. Various sections that were included within the questionnaire are as follows:

- General biographical details of research participants, their levels within the management echelons, province, the WB represented, and a specific question to establish information on a specific type of a strategic management instrument that is in place.
- Strategic management instruments, required to determine the importance of an organisation to have a strategy and effectiveness of the strategic management instruments.
- Balanced performance measures, to determine the management attitudes and approach towards a BSC as strategic management instrument and specific aspects of the four perspectives of a BSC.
- Strategic management models, to determine the management approach towards strategic management and to establish a link between the BSC and strategic management.

### 3.4.2 Population and target population

Dane (2011:106) defines a population as all possible units or elements that can be included in a research process, whilst Levine *et al.* (2008:5) indicates that a population consists of all the items or individuals about which a conclusion can be drawn.

The population consists of subjects within a management echelon of WB, situated across the country as follows:

**Table 3.1:**  
**Water Boards, provinces and number of managers**

<b>Water Board</b>	<b>Province</b>	<b>Number of managers (Executive to Junior)</b>
Magalies Water	North West	19
Botshelo Water	North West	4
Sedibeng Water	Free State	9
Bloem Water	Free State	17
Rand Water	Gauteng	51
Umgeni Water	KwaZulu-Natal	33
Overberg Water	Western Cape	5
Lepelle Northern Water	Limpopo	34
Bushbuckridge Water	Mpumalanga	8
Amatola Water	Eastern Cape	15
Mhlathuze Water	KwaZulu-Natal	19
<b>Total</b>		<b>214</b>

### 3.4.3 Study population and extent of response

The study population, or rather a sample represents a target population from which a study is conducted and conclusions derived. A sample is defined by Dane (2011:107) as a portion of the elements in a population. The process of random selection was performed and a hundred questionnaires were randomly sent through e-mail, whilst some were hand delivered to a sample of executive, senior and junior managers within the WB.

In accordance to Graziano and Raulin (2004:204), a random sample provides each member of a population an equal chance of being selected for the sample, where the

selection is independent such that all the characteristics of a sample can be in the same proportion as that of a population.

A total population in this study is 214 managers within the WB, and a process of random selection was performed with a hundred questionnaires being randomly sent through e-mail, whilst some were hand delivered to a sample of executive, senior and junior managers within the WB.

A total number of 37 questionnaires were returned out of a 100 that was sent providing a response rate of 37 per cent.

#### **3.4.4 Data analysis procedure**

Descriptive statistics were used to analyse the data and correlation analysis was performed to measure inter-relationship between various constructs.

#### **3.4.5 Reliability and validity of the measuring instrument**

Owing to a focus of the positivist paradigm of research on reliability, the reliability of a measuring instrument had to be determined. In accordance to Graziano and Raulin (2004:88), good measures give consistent results and a measure is said to be reliable if it always give the same results. A cronbach's alpha was used to measure reliability and a correlation coefficient to measure validity of the measuring instrument.

### **3.5 Analysis of results**

#### **3.5.1 Demographic characteristics of a sample**

**Table 3.2:**

**Gender of respondents**

	Frequency	Percent
Male	29	78.4
Female	8	21.6
Total	37	100.0

There is no equal distribution between male and female respondents as most of the respondents to the study are male making up 78.4 per cent, when female respondents make up 21.6 per cent of the respondents.

**Table 3.3:****Race of respondents**

	Frequency	Percent
African	22	59.5
White	9	24.3
Coloured	2	5.4
Indian	4	10.8
Total	37	100.0

A total of 59.5 per cent of the respondents are African, whilst nine are White, representing 24.3 per cent, whilst two respondents are Coloured, representing 5.4 per cent and four are Indian being 10.8 per cent of the total respondents.

**Table 3.4:****Age of respondents**

	Frequency	Percent
30 - 39 years	15	40.5
40 - 49 years	13	35.1
50 - 59 years	8	21.6
60+	1	2.7
Total	37	100.0

The majority of the respondents are between the ages of 30 and 39 years of age being 40.5 per cent of the respondents, followed by 35.1 per cent of respondents being between the ages of 40 and 49, when respondents between 50 and 59 years of age are 21.6 per cent of the respondents and only one respondent being above 60 years of age.

**Table 3.5:****Levels of Management**

	Frequency	Percent
Executive Management	5	13.5
Senior Management	23	62.2
Junior Management	9	24.3
Total	37	100.0

The majority of the respondents are in the senior echelons of management being 62.2 per cent of the respondents, when 24.3 are in junior management and 13.5 per cent in executive management.

**Table 3.6:**  
**Respondents per province**

	Frequency	Percent
North West	13	35.1
Gauteng	8	21.6
Limpopo	1	2.7
Mpumalanga	1	2.7
Free State	4	10.8
Kwa Zulu Natal	9	24.3
Eastern Cape	1	2.7
Total	37	100.0

Most of the respondents are from the North West, KwaZulu-Natal and Gauteng accounting for 35.1 per cent, 24.3 per cent and 21.6 per cent of those respondents respectively. Limpopo, Mpumalanga and the Eastern Cape accounts for 8.1 per cent of the respondents collectively, and 10.8 per cent is from the Free State.

**Table 3.7:**  
**Respondents per Water Board**

	Frequency	Percent
Magalies Water	14	37.8
Bloem Water	4	10.8
Rand Water	7	18.9
Umgeni Water	9	24.3
Lepelle Northern Water	1	2.7
Bushbuckridge Water	1	2.7
Amatola Water	1	2.7
Total	37	100.0

Most of the respondents are from Magalies Water being 37.8 per cent of the respondents, trailed by Umgeni Water at 24.3 per cent and 18.9 per cent from Rand Water. Collectively, respondents from Lepelle Northern Water, Bushbuckridge Water and Amatola Water make up 8.1 per cent of the respondents.

The above information will be quite useful to provide more familiarity and statistical significance between the variables and various biographical aspects of the respondents.

The respondents were asked if their organisations have got strategic management instruments in place and the objective of this question was to determine if the WB has got strategic management instruments in place. The majority of the respondents indicated that their WB has got a BSC as a strategic management instrument and the results are presented in table 3.8 below:

**Table 3.8:**  
**Strategic management instruments in place**

	Frequency	Percent
Yes	36	97.3
No	1	2.7
Total	37	100.0

### 3.5.2 Strategic management instruments

Questions 1 to 6 focus on the strategic management instruments and strategy to determine the importance of a WB to have strategies in place and effectiveness of strategic management instruments in executing such strategies.

**Question 1:**

Strategy leads to improved decision making.

An objective of this question was to determine management focus within the WB, as strategy is a manifestation of cross-functional decision making processes which is depicted by the integration of marketing, people, finance, operations, research and development and information systems to achieve organisational success. The results are presented in table 3.9 below.

**Table 3.9:**  
**Strategy leads to improved decision making**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.44	.558

A mean of 1.44 is derived, meaning that the majority of the respondents strongly agree that strategy leads to improved decision making. A standard deviation of 0.558 was derived indicating that the respondents agree with the notion raised above.

**Question 2:**

Strategy enhances organisational performance.

An objective of this question was to emphasise the importance of strategy within the WB due to existence of a relationship between strategy and organisational performance. The relationship between strategy and performance thus suggest that it is through strategy that WB performance is enhanced and the results are presented in table 3.10 below.

**Table 3.10:**

**Strategy enhances organisational performance**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.62	.545

A mean of 1.63 is an indication that the majority of the respondents strongly agreed that strategy enhances organisational performance. A standard deviation of 0.545 is an indicator of non-dispersion of data.

**Question 3:**

Operational efficiency is increased through strategy execution.

The objective of this question is to present the importance of strategy execution to how well the WB are managed and to indicate that through strategy execution, the WB can be well managed. The results are presented in table 3.11 below.

**Table 3.11:**

**Operational efficiency is increased through strategy execution**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.03	.799

A mean of 2.03 and a standard deviation of 0.799 are derived meaning that most of the respondents agree that operational efficiency is increased through strategic execution. It

is apparent however, that through some of the responses that there was neutrality on this question.

**Question 4:**

Interconnectivity between assets is created through strategy execution.

The objective of this question is to emphasise the importance of strategic execution and that value is created when assets of the WB depend on each other. The interconnectivity of assets also emphasise the importance of business models derived through the learning and growth and processes perspective to provide effect and outcomes to the customer and finance perspectives of the BSC. The results are presented in table 3.12 below.

**Table 3.12:**

**Interconnectivity between assets is created through strategy execution**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.42	.732

A mean of 2.42 and a standard deviation of 0.732 is derived meaning that most of the respondents agrees and are almost neutral when it relates to strategic execution and inter-connectivity of assets. The results indicated that when assets are properly integrated, this can give effect to the organisational strategy.

**Question 5:**

A strategic management instrument is vital for the strategic success of your company.

An objective of this question is to provide an important link between long term strategy and operational actions. Strategic management instruments are important in achieving that link between strategy and operations and the results are presented in table 3.13 below.

**Table 3.13:**

**A strategic management instrument is vital for the strategic success of your company**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.47	.560

A mean of 1.47 and a standard deviation of 0.560 is derived indicating that the majority of respondents agree with a postulation made that strategic management instruments are important for the strategic success of organisations as they provide a link between strategy and operational actions.

**Question 6:**

Strategic management instrument translates strategic intents into strategic actions.

An objective of this question is to determine the importance of strategic management instruments in bridging the gap between long term strategic intents and short term strategic actions and the results are presented in table 3.14 below.

**Table 3.14:**

**Strategic management instrument translates strategic intents into strategic actions**

Minimum	Maximum	Mean	Std. Deviation
1	4	1.86	.833

The majority of the respondents agree that the strategic management instruments translate strategic intents into strategic actions. A mean of 1.86 and a standard deviation of 0.833 is derived.

**3.5.3 Balanced performance measures**

Questions 7 to 17 focus on the balanced performance measures and the BSC as a strategic management instrument. Specific aspects of the four perspectives of a BSC are also dealt with.

**Question 7:**

A set of balanced performance measures is vital to the success of your organisation.

The objective if this question is to capture complexity that surrounds organisational performance of the WB, and that a combination of financial measures with strategic objectives is essential. The results are presented in table 3.15 below.

**Table 3.15:**

**A set of balanced performance measures is vital to the success of your organisation**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.70	.618

The respondents agree that a set of balanced performance measures are vital for the success of the organisation as a mean of 1.7 and a standard deviation of 0.618 is derived.

**Question 8:**

A BSC is useful strategic management instrument for your organisation.

An objective of this question is to capture the essence of the fact that the BSC is heralded as such an instrument that aligns small scale operational activities to large scale strategic objectives to guarantee organisational success of the WB. The results are presented in table 3.16 below.

**Table 3.16:**

**A BSC is a useful strategic management instrument for your organisation**

Minimum	Maximum	Mean	Std. Deviation
1	4	1.84	.688

The respondents agreed that a BSC is a useful strategic management instrument for their organisation. A mean of 1.84 and a standard deviation of 0.688 were derived.

**Question 9:**

A BSC is most useful when cascaded throughout the entire organisation.

The objective of this question is to demonstrate the importance of the cascading process that the BSC will only be effective within the WB if cascaded through the entire organisation as an element of organisational convergence to align WB to deliver on strategic outcomes. The results are presented in table 3.17 below.

**Table 3.17:**

**A BSC is most useful when cascaded throughout the entire organisation**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.57	.647

The respondents agreed that the BSC is most useful when cascaded throughout the entire organisation as postulated. A mean of 1.57 and a standard deviation of 0.647 are therefore derived.

**Question 10:**

Human resource management practises have a positive impact on the strategic performance of your organisation.

An objective of this question is to explore the learning and growth quadrant of the BSC and to capture the essence of good human resource practices within the WB. Human resource practices influence the success of the BSC implementation as it is through people when provided with proper leadership, incorporating good organisational culture that lay a basis for strategic execution. The results are presented in table 3.18 below.

**Table 3.18:**

**Human resource management practises have a positive impact on the strategic performance of your organisation**

Minimum	Maximum	Mean	Std. Deviation
1	4	1.89	.809

The respondents agreed that the human resources practises have a positive impact on the strategic performance of the organisation. It is apparent though, that there are respondents who held a view to the contrary as there is a wider dispersion of 0.86 from the mean of 1.89.

**Question 11:**

Information technology applications support organisations' processes.

An objective of this question is to further explore the learning and growth quadrant of the BSC that investment in information technology within the WB is a critical business

imperative that can enable the processes of the WB. The results are presented in table 3.19 below.

**Table 3.19:**

**Information technology applications support organisations' processes**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.86	.631

Respondents agree that the information technology applications support organisations processes as a mean of 1.86 and standard deviation of 0.631 was derived.

**Question 12:**

Internal production processes delivers on the customer value propositions.

The objective of this question is to explore the internal processes quadrant of the BSC that it is through production processes of the WB or supply chain that value proposed to customers will be delivered. The results are presented in table 3.20 below.

**Table 3.20:**

**Internal production processes delivers on the customer value propositions**

Minimum	Maximum	Mean	Std. Deviation
1	3	2.00	.624

The respondents agreed that the internal production processes delivers on the customer value proposition. A mean of 2.0 and a standard deviation of 0.624 were derived.

**Question 13:**

Effective production processes results in enhancement of product quality.

An objective of this question is to further explore the processes quadrant of the BSC and that through the production processes, process improvements can be incorporated within the value chain to enhance the product quality that WB deliver to its customers. The results are presented in table 3.21 below.

**Table 3.21:**

**Effective production processes results in enhancement of product quality**

Minimum	Maximum	Mean	Std. Deviation
1	4	1.86	.683

The respondents agreed that effective production processes result in enhancement of product quality; however it is apparent that some of the respondents disagreed. The mean of 1.86 and a standard deviation of 0.683 were derived providing an indication that views expressed above holds.

**Question 14**

The BSC leads the organisation to deal effectively with stakeholders.

An objective of this question is to explore the customer quadrant that BSC it is through the BSC that WB can deal effectively with stakeholders. In a dynamic business world, organisations are serving a myriad of stakeholders. BSC with its customer perspective will thus lead WB to deal effectively with its stakeholders. The results are presented in table 3.22 below.

**Table 3.22:**

**The BSC leads the organisation to deal effectively with stakeholders**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.08	.806

With a mean of 2.08 and a standard deviation of 0.806, the respondents agree that the BSC with its customer perspective leads the organisation to deal effectively with its stakeholders.

**Question 15**

A customer value proposition assists your organisation to serve customers better.

The objective of this question is to further explore the customer quadrant of the BSC where there is a movement from only dealing with the customer, but to propose a set of value propositions to the customers in order to serve them better. The contemporary organisation has got a myriad of customers each having their own expectations. A customer value proposition is a strategic imperative and would thus enable the WB to

serve customers better through its proposed values. The results are presented in table 3.23 below.

**Table 3.23:**

**A customer value proposition assists your organisation to serve customers better**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.78	.485

A mean of 1.78 and a standard deviation of 0.485 were derived indicating that it can be postulated that a customer value proposition assists the organisation to serve its customers better.

**Question 16**

Financial measures are of importance to achievement of organisational strategy.

The objective of this question is to further demonstrate the essence of the financial quadrant of the BSC. Financial indicators are important elements of the BSC to the WB and an ultimate outcome of measuring the economic consequences of actions already taken in the learning and growth, processes and customer perspectives. The results are presented in table 3.24 below.

**Table 3.24:**

**Financial measures are of importance to achievement of organisational strategy**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.54	.611

Respondents agree that the financial measures are of importance to the achievement of organisational strategy and are a reflection of management actions already taken in the learning and growth, processes and customer perspectives. A mean of 1.54 and a standard deviation of 0.611 are derived.

**Question 17**

Financial measures lead to achievement of strategy if linked to strategic objectives.

An objective of this question is to further explore the financial quadrant of the BSC that financial measures are lagging indicators and should not be emphasised over strategic

objectives. Whilst the financial indicators provide a reflection of management decision making processes, strategic objectives provide future prospects of a WB, thus creating a need to balance financial indicators and strategic objectives. The results are presented in table 3.25 below.

**Table 3.25:**

**Financial measures lead to achievement of strategy if linked to strategic objectives**

Minimum	Maximum	Mean	Std. Deviation
1	3	1.67	.632

A mean of 1.67 and a standard deviation of 0.632 was derived meaning that the respondents agree that the financial measures lead to achievement of strategy if linked to strategic objectives.

### 3.5.4 Strategic management models

Question 18 to 23 determines the management approach towards strategic management and to establish a link between the BSC and strategic management models.

**Question 18**

The strategic management process of your organisation is described as pro-active with new planned initiatives.

An objective of this question is to determine the typology of strategic management processes within the WB, if it is characterised by rational planning and strategy is viewed as a static process where initiatives are planned on a basis of an objective business environment. A rational planning approach suggests that strategy is viewed as a deliberate process where achieved strategies are as a result of implementation of planned initiatives and the results are presented in table 3.26 below.

**Table 3.26:**

**The strategic management process of your organisation is described as pro-active with new planned initiatives**

Minimum	Maximum	Mean	Std. Deviation
1	5	2.17	.878

The majority of the respondents agree that the strategic management processes within their organisations are described as pro-active with new planned initiatives. A mean of 2.17 was derived with a standard deviation of 0.878 indicating that the respondents agree with the notions raised above.

**Question 19**

The strategic management process of your organisation is described as re-active with emerging initiatives.

An objective of this question is to determine if strategic management processes within the WB are viewed as a creative adaption to environmental challenges where emphasis is placed on a combination of processes, resources and competencies of an organisation to match the needs of a dynamic environment. Achieved strategies are thus a result of an emergent or re-active process due to environmental dynamism. The results are presented in table 3.27 below.

**Table 3.27:**

**The strategic management process of your organisation is described as re-active with emerging initiatives**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.56	.909

The majority of respondents agreed that the strategic management processes in their organisations are described as re-active with emerging initiatives. It seems that some of the respondents disagreed with that notion. A mean of 2.56 and a standard deviation of 0.909 is derived and indicate agreement to postulations made.

**Question 20**

A BSC provides your organisation with an ability to sense environmental dynamics.

An objective of this question is to determine the usage of a BSC as a strategic management instrument, and if through the BSC the organisation can be in a position to create an interface with the external environment to obtain an insight into the current and future prospects. Once an interface with the external environment has been obtained, re-engineering and business processes adaption can be performed to be harmonised with the external environment. The results are presented in table 3.28 below.

**Table 3.28:**

**A BSC provides your organisation with an ability to sense environmental dynamics**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.36	.867

A mean of 2.36 and a standard deviation of 0.867 indicate that the majority of the respondents agree that the BSC provides an organisation with an ability to sense the environmental dynamics as the sensing capability of the BSC allows for interface with the external environment, for re-engineering and business processes adaption to be in harmony with the external environment.

**Question 21:**

A BSC provides your organisation with the ability to effectively allocate resources.

**Objective of the question**

An objective of this question is to amplify on the strategic management processes that the WB can use the BSC as such an instrument in pursuit of strategic management where resources are allocated to focus and align action in order to control and evaluate corporate performance. The results are presented in table 3.29 below.

**Table 3.29:**

**A BSC provides your organisation with the ability to effectively allocate resources**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.19	.920

The respondents agree that the BSC can be used as a tool to provide the organisation with an ability to effectively allocate resources. A mean of 2.19 and a standard deviation of 0.920 were derived.

**Question 22:**

A BSC provides your organisation with the ability to determine its position in the market.

An objective of this question amplifies on the importance of a BSC as a strategic management process by providing an internal and external view of the organisation, that the dynamism of an external environment and complex organisational structures requires

a shift from operational activity to strategic guidance thus providing the WB with its position in the market within which it operates. The results are presented in table 3.30 below.

**Table 3.30:**

**A BSC provides your organisation with the ability to determine its position in the market**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.39	.934

Respondents agree that the BSC provides their organisations with an ability to determine its position in the market. There was however respondents that disagreed with that notion with a dispersion of 0.934 from the mean of 2.39 however, the results indicate that there is agreement with notions raised.

**Question 23:**

A BSC assists your organisation to evolve over time.

An objective of this question is to obtain a view on strategic management as a dynamic and ongoing managerial process, thus through the BSC the WB can evolve over time as they incrementally face the challenges and adapt during the times of radical change and the results are presented in table 3.31 below.

**Table 3.31:**

**A BSC assists your organisation to evolve over time**

Minimum	Maximum	Mean	Std. Deviation
1	4	2.19	.889

Respondents agree that the BSC is such a tool that can assist an organisation to evolve over time. Some of the respondents disagreed with that notion though as a mean of 2.19 and a standard deviation of 0.889 was derived.

### 3.6 Reliability and validity of the measuring instrument

#### 3.6.1 Cronbach's alpha coefficient

In order to assess the internal consistency between the items of the measuring instrument, Cronbach's alpha coefficients were calculated (Page & Meyer, 2000:292). Nunnally and Bernstein (1994:265) suggest that for acceptable reliability the Cronbach alpha coefficient should be greater than 0.7 therefore, the greater the Cronbach's alpha coefficient is the more reliable the scale.

**Table 3.32:**

**Cronbach's alpha coefficient: Strategic management instruments**

Cronbach's alpha	Cronbach's alpha based on standardised Items	N of Items
.801	.816	6

The derived Cronbach's alpha coefficient on strategic management instruments is 0.801 meaning that the six factors used to measure strategic management instruments have acceptable reliability.

**Table 3.33:**

**Cronbach's alpha coefficient: Balanced performance measures**

Cronbach's alpha	Cronbach's alpha based on standardised items	N of Items
.868	.871	11

A derived Cronbach's alpha coefficient on the balanced performance measures is 0.868 meaning that the 11 factors used to measure balanced performance measures have acceptable reliability.

**Table 3.34:**

**Cronbach's alpha coefficient: Strategic management models**

Cronbach's alpha	Cronbach's alpha based on standardised items	N of Items
.766	.765	6

A derived Cronbach's alpha coefficient on the strategic management models is 0.766 meaning that the six factors used to measure strategic management models have got acceptable reliability.

### 3.6.2 Validity of the measuring instrument

In accordance to Graziano and Raulin (2004:90), the validity refers to the consistency of measurements and a correlation co-efficient is used to quantify the degree of validity.

**Table 3.35:**  
**Correlation coefficient: Gender**

GENDER		N	Mean	p value
Strategic management instruments	Male	29	1.8172	.813
	Female	8	1.7708	
Balanced performance measures	Male	29	1.8741	.065
	Female	8	1.5557	
Strategic management models	Male	28	2.3631	.338
	Female	8	2.1250	

A p-value of 0.813 on strategic management instruments, of 0.065 on balanced performance measures and that of 0.338 were derived between males and females meaning that there is no significant statistical difference between how males and females perceive various variables that were measured.

A p-value of greater than 0.05 indicates no significant statistical difference.

**Table 3.36:****Correlation coefficient: Race**

		N	Mean	p value
Strategic management instruments	African	22	1.7794	0.99
	White	9	1.8148	
	Coloured	2	1.7500	
	Indian	4	1.8333	
	Total	37	1.7926	
Balanced performance measures	African	22	1.7737	0.44
	White	9	1.9596	
	Coloured	2	1.9091	
	Indian	4	1.5455	
	Total	37	1.8024	
Strategic management models	African	22	2.2417	0.74
	White	9	2.3333	
	Coloured	2	2.7500	
	Indian	4	2.1250	
	Total	37	2.2810	

There is also no significant statistical difference in how people of various races perceived the variables that were tested. Strategic management instruments yielded a p-value of 0.99, balanced performance measures of 0.44 and strategic management models of 0.74.

**Table 3.37:****Correlation coefficient: levels of management**

		N	Mean	p value
Strategic management instruments	Executive Management	5	1.3333	0.04
	Senior Management	23	1.8348	
	Junior Management	9	2.0000	
	Total	37	1.8072	
Balanced performance measures	Executive Management	5	1.4545	0.13
	Senior Management	23	1.9238	
	Junior Management	9	1.6970	
	Total	37	1.8052	
Strategic management models	Executive Management	5	2.1333	0.62
	Senior Management	22	2.2879	
	Junior Management	9	2.4630	
	Total	36	2.3102	

There is no significant statistical difference on how various levels of management perceive strategic management instruments due to a p-value of 0.04 that was derived. The same applies to how various levels of managers perceives the balanced performance measures and strategic management models due to a p-value of 0.13 and that of 0.62 derived respectively.

### Correlation among the variables

To measure correlation between variables, a Pearson correlation index was utilised. In accordance to Graziano and Raulin (2004:111), the Pearson correlation index is a widely used index and a correlation of +1.00 means perfect positive correlation, and that of -1.00 represents a perfect negative correlation.

**Table 3.38:**  
**Correlation among variables**

		Strategic management instruments	Balanced performance measures	Strategic management models
Strategic management instruments	Pearson Correlation	1	0.697	0.592
	Sig. (2-tailed)		.000	.000
	N	37	37	37
Balanced performance measures	Pearson Correlation	0.697	1	0.502
	Sig. (2-tailed)	.000		.002
	N	37	37	37
Strategic management models	Pearson Correlation	0.592	0.502	1
	Sig. (2-tailed)	.000	.002	
	N	37	37	37

There is a strong relationship between the variables measured on strategic management instruments and those on balanced performance measures as a correlation of 0.697 is observed. A strong relationship also exists between variables measured on strategic management instruments and strategic management models of 0.592. There is also an observed strong correlation between the balanced performance measures and strategic management instruments of 0.502, thus providing an indication that there is a strong relationship among all the variables measured.

### **3.7 Conclusion**

This chapter placed a focus on the empirical study and presentation of results. A quantitative research method and data gathering techniques were used. Data that was gathered through a Likert scale questionnaire from the various WB was analysed and interpreted. Reliability and validity of a measuring instrument used was determined through the Cronbach's alpha coefficient. A Pearson correlation index was utilised to measure correlation among variables.

## **CHAPTER FOUR**

### **CONCLUSIONS AND RECOMMENDATIONS**

*“when the well is dry, we learn the importance of water” – Benjamin Franklin*

#### **4.1 Introduction**

This chapter will outline the extent to which research objectives have been met. The research findings on the basis of the empirical study performed and recommendations flowing from the results will be presented. Conclusions will be presented to inform the extent to which the research objectives as outlined in chapter one have been addressed.

#### **4.2 Research objectives**

The primary research objective of the study was to investigate the appropriateness of a BSC as a strategic management instrument to measure performance in the WB. This objective was addressed through the literature review performed in chapter two and the empirical study performed in chapter three.

#### **4.3 Research findings**

Through the empirical process as outlined in chapter three, the following research findings were made:

##### **4.3.1 Strategic management instruments**

This study attempted to understand if the implementation of strategy within the WB could be performed through usage of the BSC. To achieve that, importance of the WB having strategies in place and utilisation of the strategic management instruments was emphasised. The results as reflected in table 3.9 indicates that the WB have got strategies in place that bring management focus into effect as management focus is characterised by cross-functional decision making processes. It was further established that strategies adopted within the WB influence business models through inter-connectivity of assets of the WB as reflected in results on table 3.12. Performance of the WB is enhanced through strategic execution as presented in table 3.10. Importance of the strategic management instruments within the WB is reflected by the results as presented in table 3.13 which indicate that the strategic management instruments of the

WB provide a link between long term strategies and operational actions. Such strategic management instruments also translate strategic intents of the WB into strategic actions as reflected in table 3.14.

#### **4.3.2 Balanced performance measures**

The study sought to derive an understanding if the strategic management challenges within the WB could be addressed through usage of a BSC as the BSC provides a balanced performance measure through its four perspectives. The study has shown that there is a widespread usage of a BSC within the WB and it is heralded as a useful strategic management instrument as per the results reflected in table 3.16. It is however found that notwithstanding the usage of a BSC within the WB, its success can only be captured through balanced performance measures which are a combination of financial and strategic objectives as depicted in table 3.15. It is however emphasised that effectiveness of a BSC through its balanced performance measures is shown if cascaded throughout the WB as depicted in table 3.17.

The study also sought to evaluate if the BSC through its balanced performance measures, can be a vital strategic management instrument for the WB. The balanced performance measures are thus provided effect through the learning & growth, processes, customer and finance perspectives of a BSC.

To capture the essence of the learning and growth perspective, it was established that good human resource practises within the WB aligns the organisation to enable the BSC implementation process as depicted in table 3.18. Table 3.19 reflects that investments in information technology applications are a strategic imperative within the WB to enable the processes and ultimately improve on the efficiencies and delivery of services to customers.

Process improvements are incorporated into the value chain of the WB through the processes perspective to enhance product quality that is delivered to customers and that is reflected on the results presented in table 3.21.

As entities of government, WB has got a wide range of stakeholders who have got authority, the resource providers and the market. The WB also serves a vast set and a

dynamic customer base. The BSC with its customer perspective through the customer value proposition enable the WB to service the customers better as reflected in table 3.23 and deliver on the values proposed to each set of stakeholders as reflected in table 3.22.

The results as reflected in table 3.24 indicate that financial measures are important to strategic success of the WB, and as much as financial measures are important, they are a reflection of decisions already taken in the learning & growth, processes and customer perspectives. Financial measures are thus crucial to the achievement of the WB strategies if linked to other strategic objectives as reflected by the results in table 3.25.

### **4.3.3 Strategic management models**

The study sought to understand the current strategic management models within the WB and if the BSC could be central to them. The results as depicted in table 3.26 indicate that the WB view strategy as a pro-active process. The results as depicted in table 3.27 indicate that the WB also view strategy as an emergent process.

The above thus indicate that strategy within the WB is viewed as a combination of a deliberate and an emergent process, where a deliberate process allow for rational and rigid planning given various legislative mandates. The emergent process allow for reaction to environmental dynamism given the unique geographical characteristics and political dynamism of the WB.

The results as reflected in table 3.28 indicate that the WB view a BSC as an effective instrument to sense the environmental dynamism of its operations to allow for internal adaption to harmonise the WB with the external environment.

WB operates in a service delivery environment where constitutional mandates, political considerations and limited resources are key factors that inform their operations. The results as presented in table 3.29 indicate that the BSC allow the WB to effectively allocate resources to focus, align control and evaluate corporate performance.

The results as presented in table 3.30 indicates that the BSC does provide the WB with a view of its internal environment with the learning and growth and processes perspectives,

thus providing a strategic guidance to understand the WB sector market dynamics and determine their position in the market.

The results in table 3.31 indicate that through the BSC, the WB can incrementally face the challenges of an environment within which they operate and thus evolve over time as strategic management is an on-going process.

#### **4.3.4 Convergence of literature on strategic management and the BSC**

The study sought to identify conceptual convergence between the literature on strategic management processes and the BSC. The literature in chapter two addressed this objective. Through statistical analysis, it was also established that there is a strong relationship between the strategic management instruments, balanced performance measures and strategic management models through the results as presented in table 3.38. This indicates that the BSC is indeed a strategic management instrument of choice within the WB and confirms the conceptual convergence as reflected by the literature.

A strong relationship between the strategic management instruments, balanced performance measures and strategic management models as reflected through empirical research does reflect the synergies that could be achieved between the BSC as a strategic management instrument and strategic management models.

Participants in this study have got coherent views on the BSC as an appropriate instrument to measure performance within the WB. The results presented in table 3.35, those reflected in table 3.36 and in table 3.37 indicate that there is no difference in how males and females, various race groups and various echelons of management respectively, perceive the BSC as an appropriate strategic management instrument.

#### **4.4 Recommendations**

The recommendations are as follows:

- The study has confirmed a BSC as an appropriate strategic management instrument therefore it is recommended that there should be a concerted management focus and effort in implementing strategies through utilisation of a

BSC to improve performance of the WB. Management of a strategy through a BSC is absolutely vital and the underlying purpose which is to manage strategy and measure performance needs to be clearly articulated.

- Strategic management process within the public sector is typified by institutional, legal and political contexts and the WB are not an exception. It is thus recommended that strategic alliances be maintained by the WB due to the above mentioned contexts and service delivery environment within which the WB operate. Co-operation with other government entities at institutional, legal and political contexts is thus necessary such that collaboration rather than competition becomes a key strategic imperative for the WB. The BSC and management of strategy need to be appropriately configured for the service delivery environment within which the WB operate such that the collaboration imperative is spread throughout the entire public institutions.
- In order to embed the BSC as a component that is central to the comprehensive strategic management system, it is recommended that a closed loop management system be implemented and utilised within the WB to integrate strategy and operations. Through the closed loop management system, various parts of the organisation can be modified and co-ordinated to create strategic alignment and adaption to environmental dynamics.
- In order to assist the Shareholder, being the Minister of Water Affairs to evaluate strategies and performance of the WB, the BSC can be utilised as a regulatory instrument by the Authorities.

## **4.5 Conclusions and areas for future research**

### **4.5.1 Conclusions**

The following conclusions are thus be derived to address the corresponding research questions as alluded upon in chapter one.

- Through the literature review as outlined in chapter two and the empirical study as performed in chapter three, it can be concluded that there are synergies between

the strategic management models and the BSC within the WB, thus the combined effect of the BSC and the strategic management models can result in effective strategic management.

- Literature and the empirical study performed, confirms the BSC as a dominant instrument in performance management and cornerstone of managerial system for strategy execution within the WB.
- The literature on strategic management and the BSC was merged to understand if and how the BSC could be utilised as an appropriate instrument for strategic management in the WB as outlined in chapter two of this study.

#### **4.5.2 Areas for future research**

The following areas for future research were identified.

- The National Treasury in South Africa advocates for the use of the RBM as a strategic management approach in the public sector. More studies need to be conducted on this concept, its relevance to the South African context and if it is effective when utilised solely or if it can be utilised in conjunction with the BSC.
- As a result of the study limitations due to the focus being solely on the WB, a large scale analysis could be conducted to extend the study on strategic management and utility of a BSC to other entities and spheres of government.
- The study focused solely on appropriateness of a BSC as a strategic management instrument and has shown that the BSC is indeed the strategic management instrument of choice. Effectiveness of strategies and BSC as adopted and implemented by the WB could be considered as an area for further studies.
- Whilst the study has proven that indeed a BSC is strategic management instrument of choice for the WB, literature identified other strategic management models that are advocated for usage in the water sector such as the “water scorecard”, PDCA framework and the hoshin kanri. More studies needs to be

conducted if the PDCA framework and hoshin kanri can be used solely or in conjunction with the BSC as strategic management instruments.

The study was conducted to make a contribution towards integration of the BSC and strategic management within the WB. The BSC should therefore not be viewed as a panacea as it cannot make a strategy not worth implementing to be implemented. The BSC cannot also make strategic management happen by magic, thus management effort and leadership is required to ensure strategic success through implementation of a BSC.

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## ANNEXURE A-MEASURING INSTRUMENT

### Questionnaire

#### **The Balanced Scorecard as a instrument to manage strategy in the Water Board**

Dear Sir/Madam,

I am at present conducting research into strategic management and utility of the Balanced Scorecard within the Water Boards sector, with the Potchefstroom Business School of the North West University. The topic is **“The Balanced Scorecard as a instrument to manage strategy in the Water Board”**.

The objective of a questionnaire is to obtain the views of management within the Water Boards on the Balanced Scorecard and strategic management issues.

I should appreciate it if you could complete the attached questionnaire and due to a fairly small sample that was selected to receive the questionnaire, your response will be very crucial to the success of this study. All the information will be treated with the highest level of confidentiality.

Thank you for your time and consideration.

With regards,

Thoane Sengfeng

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Cell: 082 873 6912

E-mail: [thoanes@magalieswater.co.za](mailto:thoanes@magalieswater.co.za)

## SECTION I – BIOGRAPHICAL DETAILS

1. **Gender:**

<b>Male</b>	<b>1</b>
<b>Female</b>	<b>2</b>

2. **Race:**

<b>African</b>	<b>1</b>
<b>White</b>	<b>2</b>
<b>Coloured</b>	<b>3</b>
<b>Indian</b>	<b>4</b>
<b>Other</b>	<b>5</b>

3. **Age:**

<b>20 – 29</b>	<b>1</b>
<b>30 – 39</b>	<b>2</b>
<b>40 – 49</b>	<b>3</b>
<b>50 – 59</b>	<b>4</b>
<b>60+</b>	<b>5</b>

4. **Level of Management**

<b>Executive Management</b>	<b>1</b>
<b>Senior Management</b>	<b>2</b>
<b>Junior Management</b>	<b>3</b>
<b>Other</b>	<b>4</b>

5. **Province:**

<b>North West</b>	<b>1</b>
<b>Gauteng</b>	<b>2</b>
<b>Limpopo</b>	<b>3</b>
<b>Mpumalanga</b>	<b>4</b>
<b>Free State</b>	<b>5</b>
<b>Northern Cape</b>	<b>6</b>
<b>Kwazulu Natal</b>	<b>7</b>
<b>Western Cape</b>	<b>8</b>
<b>Eastern Cape</b>	<b>9</b>

6. **Water Board:**

<b>Magalies Water</b>	<b>1</b>
<b>Botshelo Water</b>	<b>2</b>
<b>Sedibeng Water</b>	<b>3</b>
<b>Bloem Water</b>	<b>4</b>
<b>Rand Water</b>	<b>5</b>
<b>Umgeni Water</b>	<b>6</b>
<b>Overberg Water</b>	<b>7</b>
<b>Lepelle Northern Water</b>	<b>8</b>
<b>Bushbuckridge Water</b>	<b>9</b>
<b>Amatola Water</b>	<b>10</b>

7. **Does your organisation have strategic management instrument in place.**

<b>Yes</b>	<b>1</b>	<b>No</b>	<b>2</b>
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**If your answer is yes, which one.....**

## SECTION II – STRATEGIC MANAGEMENT INSTRUMENTS

No	Question	Strongly agree(SA)	Agree (A)	Neutral (N)	Disagree (D)	Strongly disagree (SD)
1.	Strategy leads to improved decision making.	1	2	3	4	5
2.	Strategy enhances organisational performance.	1	2	3	4	5
3.	Operational efficiency is increased through strategic execution.	1	2	3	4	5
4.	Inter-connectivity between assets is created through strategic execution.	1	2	3	4	5
5.	A strategic management system is vital for the success of your company.	1	2	3	4	5
6.	Strategic management system translates strategic intents into strategic actions.	1	2	3	4	5

## SECTION III – BALANCED PERFORMANCE MEASURES

No	Question	SA	A	N	D	SD
7.	A set of balanced performance measures is vital to the success of your organisation.	1	2	3	4	5
8.	A Balanced Scorecard is a useful strategic management system for your organisation.	1	2	3	4	5
9.	A Balanced Scorecard is most useful when cascaded throughout the entire organisation.	1	2	3	4	5
10.	Human resource management practises have a positive impact to the strategic performance of your organisation.	1	2	3	4	5
11.	Information technology applications support organisation's processes.	1	2	3	4	5

12.	Internal production processes delivers on the customer value propositions.	1	2	3	4	5
13.	Effective production processes results in enhancement of product quality.	1	2	3	4	5
14.	Balanced Scorecard leads the organisation to deal effectively with stakeholders.	1	2	3	4	5
15.	A Customer Value Proposition assists your organisation to serve the customers better.	1	2	3	4	5
16.	Financial measures are of importance to achievement of organisational strategy.	1	2	3	4	5
17.	Financial measures lead to achievement of strategy if linked to strategic objectives.	1	2	3	4	5

#### SECTION IV – STRATEGIC MANAGEMENT MODELS

No	Question	SA	A	N	D	SD
18.	The strategic management process of your organisation is described as pro-active with new planned initiatives.	1	2	3	4	5
19.	The strategic management process of your organisation is described as re-active with emerging initiatives.	1	2	3	4	5
20.	A Balanced Scorecard provides your organisation with an ability to sense environmental dynamics.	1	2	3	4	5
21.	A Balanced Scorecard provides your organisation with ability to effectively allocate resources.	1	2	3	4	5
22.	A Balanced Scorecard provides your organisation with ability to determine its position in the market.	1	2	3	4	5
23.	A Balanced Scorecard assists your organisation to evolve over time.	1	2	3	4	5

**24. General comments**

**-end-**