ALIGNMENT BETWEEN BUSINESS AND IT STRATEGIES: A CASE STUDY AT A TRANSPORT ORGANISATION

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ALIGNMENT BETWEEN BUSINESS AND IT STRATEGIES: A CASE STUDY AT A TRANSPORT ORGANISATION.

By

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DECLARATION

I, LeRoy David William Constance, declare that the contents of this thesis represent my own unaided work, and that the thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

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Signed **Date**

ABSTRACT

For almost three decades practitioners, academics, consultants, and research organisations have identified 'attaining alignment between IT and business' (Luftman & Kempaiah, 2007), as a pervasive problem. Despite the wide acceptance of the term "strategic alignment", there was no consensus on how to achieve alignment. The research philosophy was of an interpretive study and an inductive research approach was used. The research strategy was by means of a case study, namely PRASA Western Cape, a business unit of Passenger Rail Agency of South Africa (PRASA). The time horizon for this research was cross sectional. For the data collection a semi-structured interview, supported by secondary data from the business plan and annual report, was used. The research problem was "PRASA has dysfunctional and fragmented institutional arrangements, resulting in misalignment between business and IT". The primary research question to address this problem was "How can PRASA manage strategic alignment between business and IT?"

The aim of this research was to understand why the misalignment between business and IT strategies exists at PRASA. A further aim was to propose a guideline to manage alignment between business and IT strategies with the intention of overcoming the fragmented and dysfunctional institutional arrangements. To address resolving the research problem three theoretical models were used. The strategic alignment model was used to ascertain the strategic perspective of PRASA as well as to identify the external strategic fit and internal functional integration of an organisation. The second model used was the strategic alignment maturity model. This model was used to identify the alignment maturity of the business/IT strategies. The final model used was the balanced scorecard. Alignment is one of the best practices recommended by the balanced scorecard, and it recommends aligning all to the strategy of the company. The reason for using the balanced scorecard was that the company currently uses this tool to manage performance.

The research finding concluded that PRASA had the strategic execution alignment perspective - business strategy dictates the IT strategy. The overall strategic alignment maturity of the organisation was found to be in initial process. The balanced scorecard methodology was known by all, yet few knew what the performance measures for the organisation was for the year. The triangulated conclusion was that strategic alignment between business and IT was a problem at PRASA. The recommendation was that the organisation conducts three surveys firstly to identify its strategic choice, secondly to identify the strategic alignment maturity and lastly to do a balanced scorecard best practice survey.

DEDICATION

To my mother Denise, with love and gratitude.

To my wife Bernedette, for always supporting me.

My children Mark, Roxanne and Sean - you make me so proud.

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I wish to thank:

- my supervisor, Doctor André de la Harpe, for his guidance, encouragement, perseverance and support
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- my wife and children, for their continued faith in me
- my brothers and sisters and their families
- my extended family and my friends

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1 CHAPTER 1 INTRODUCTION

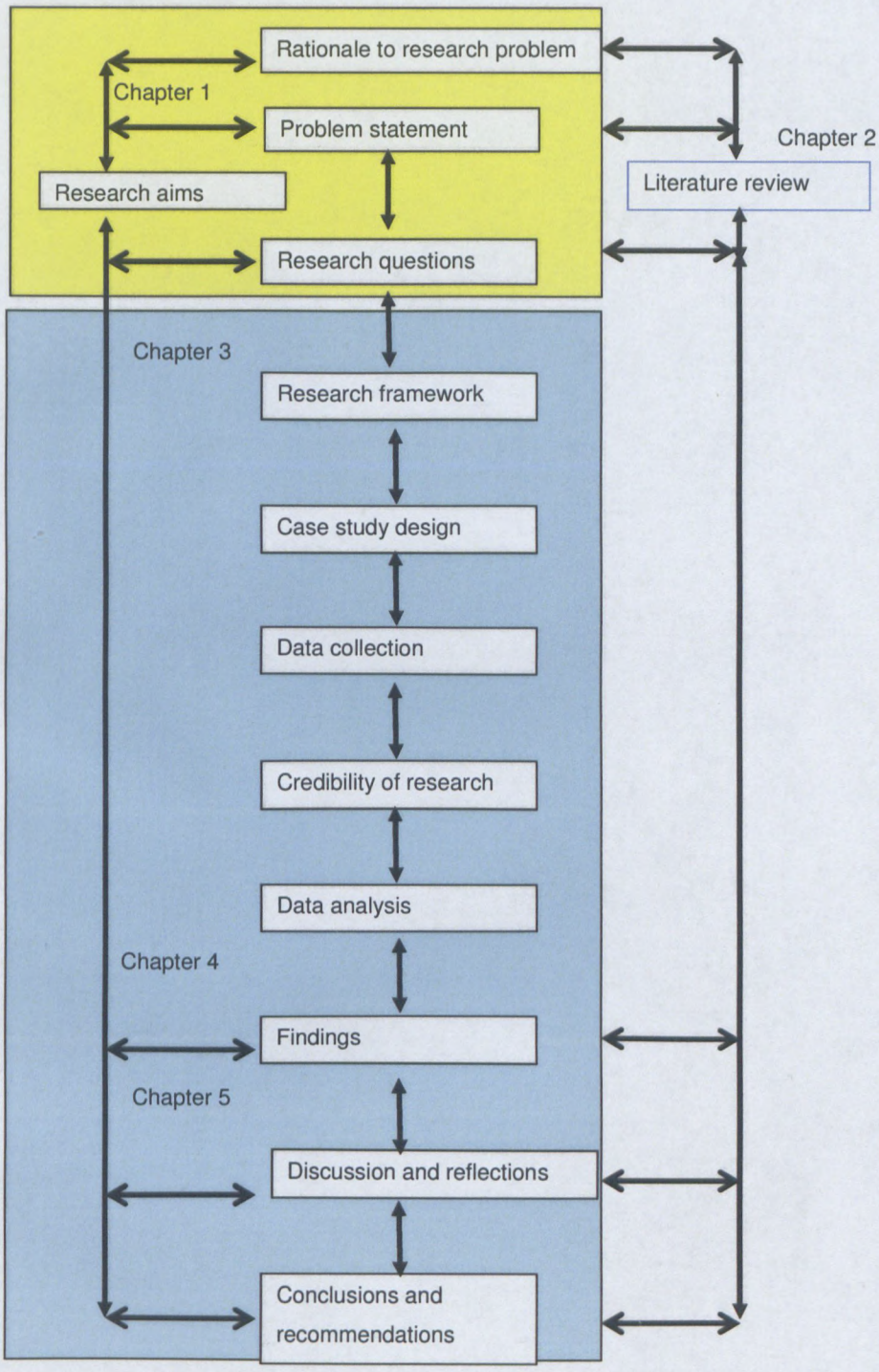


Diagram 1: The context of research

1.1 INTRODUCTION AND CONTEXT

Prior to 2008 Metrorail, a subsidiary of Transnet, managed the assets of the **South African Rail Commuter Corporation (SARCC)** according to the Legal Succession to the South Africa Transport Services (SATS) Act of 1989. Under this arrangement, the SARCC owned the commuter rail assets and retained responsibility for capital expenditure and all asset maintenance with the exception of maintenance associated with operations, which became the responsibility of Metrorail.

The Passenger Rail Agency of South Africa (PRASA) was formed in 2008 when the Legal Succession to the South Africa Transport Services (SATS) Act of 1989 was amended. PRASA is a public passenger transport entity formed through the consolidation of government-owned passenger rail entities, a road based passenger carrier and a property asset management company, and is owned 100% by the government of South Africa. PRASA's primary objective is:

- to ensure that at the request of the Department of Transport, rail commuter services are provided within, to and from the Republic in the public interest; and
- to provide, in consultation with the Department of Transport, for long haul passenger rail and bus services within, to and from the Republic in terms of the principles set out in section 4 of the National Land Transport Transition Act, 2000 (Act No.22 of 2000), PRASA (n.d.).

PRASA's primary responsibility, according to the amendment to the Legal Succession to the South Africa Transport Services (SATS) Act of 1989, was to effectively develop and manage rail and related transport infrastructure and to provide efficient rail- and road-based passenger transport services.

1.2 RATIONALE TO THE RESEARCH PROBLEM

The lack of clarity on roles between Metrorail and the SARCC was the source of some of the problems that impacted negatively on the maintenance of the commuter asset base. This separation of operations (Metrorail) from asset management (SARCC) proved to be a major contributing factor in the failure of these entities to respond effectively to passenger demands, as well as their lack of accountability for poor commuter services. The institutional arrangements that governed passenger rail and the entire public transport system over the years did not promote efficiency, innovation and accountability. There was also a great deal of confusion between the contractor and regulatory functions implicitly embodied in the SARCC.

The provision of efficient and affordable public passenger transport services is integral to government's drive to create employment opportunities, stimulate economic development and

reduce levels of poverty. Enhanced mobility will facilitate greater access to socio-economic opportunities for the urban and rural poor whilst contributing to an efficient transport system to the benefit of all South Africans, highlighting the need for a vibrant public passenger transport network to support sustainable growth and development.

According to the PRASA business plan (PRASA, 2009) the main reason for the formation of PRASA ***was to overcome the fragmented and dysfunctional institutional arrangements that existed in the provision of passenger services***. This fragmentation and dysfunctionality was the root cause of the misalignment and poor performance in the provision of passenger services. This status quo has not been fully addressed by PRASA. It is especially true in the alignment of business and IT strategies. The extent of this mis-alignment is the reason for the study.

In this study, the focus of the research falls on the extent of non-alignment of business and IT strategies at PRASA. Although many studies have been conducted on alignment between business and IT, the fragmented and dysfunctional environment in such a strategic sector of the South African economy warrants a very close inspection of the factors at play, creating this undesirable situation.

1.2.1 Statement of the research problem

This study seeks to **understand** the extent of alignment between business strategies and IT strategies only at PRASA. The problem statement is therefore:

PRASA has dysfunctional and fragmented institutional arrangements resulting in misalignment between business and IT.

1.3 RESEARCH QUESTIONS

In this section the alignment of the research question and sub-questions to the research problem are explained.

Research question:

"How can PRASA manage strategic alignment between business and IT?"

The objective of the main research question was to understand how PRASA can manage strategic alignment between business and IT. Five sub-questions were posed to respond to the main question.

The objectives and methods explain how each sub-question answered the primary question.

Research sub-question 1

Why is the need for alignment between business and IT strategies important for PRASA?

The objective of this question was to understand the extent of alignment between business and IT strategies at PRASA, by firstly exploring how important this alignment is to PRASA. The dysfunctional and fragmented institutional arrangements, which were the reason for the formation of PRASA, were used as the basis for this research, and could be a significant factor in the alignment of business and IT strategies at PRASA.

The method used to answer this question was primarily a literature research. A lens was used to interpret the sub-question by means of semi-structured interviews to gain understanding from both business and IT managers on the importance of alignment between business and IT at PRASA. This was supplemented by studying the business plan and annual report to get a clearer perspective from a corporate point of view.

Research sub-question 2

How can the Strategic Alignment Model (SAM) be utilised to understand the strategic alignment between business and IT at PRASA?

The goal of this question was to ascertain how PRASA currently aligns business and IT strategies as it relates to the concepts of strategic fit (which is the interrelationship between external and internal domains of the SAM) and functional integration (the integration between internal and external domains of the SAM). This sub-question is asked in an attempt to interpret the current strategic perspective at PRASA (by using the SAM) in order to align business and IT strategies. To answer this question a literature review was carried out on the different implementations of the SAM. Then a semi-structured interview was carried out to understand which current strategic perspective was in place at PRASA. The SAM (Henderson and Venkatraman,1993) is the most cited strategic alignment model for business and IT strategies. Although this model is old this pioneering work is valid today and referenced by many researchers. For example the later references to the SAM will be addressed in the literature review especially in Section 2.4.1. It was used to firstly identify strategic fit and functional integration requirements of strategic alignment. Secondly, it was used to identify the four strategic perspectives of business and IT alignment.

Research sub-question 3

How can the six factors of the Strategic Alignment Maturity Model (SAMM) be used to strategically align the PRASA business and IT strategies?

The objective of the sub-question was to research the maturity of strategic alignment between business and IT at PRASA. The research attempted to understand how mature PRASA is in terms of the six constructs of the SAMM. The maturity level of the company gives an indication of the current status of alignment between business and IT strategies. The response to the question was to firstly obtain a literature review of the use of the SAMM. Next, a semi-structured interview to understand the maturity levels as perceived from the respondents was carried out. This was supplemented by a secondary data collection from the company's business plan and annual report. The SAMM model was chosen because it provides six constructs to measure the maturity of alignment between business and IT strategies. This combination of alignment maturity constructs improves alignment between business and IT strategies.

Research sub-question 4

How can the balanced scorecard be used to strategically align the PRASA business and IT strategies?

Sub-question 4 was posed to enable the researcher to understand if and how PRASA uses the balanced scorecard to measure performance. More significantly how does performance measurements of the balanced scorecard reflect upon alignment between business and IT strategies in PRASA? To understand this relationship primary and secondary data were collected to fully comprehend why, and to what extent, the alignment between business and IT strategies at PRASA matured. A literature study was carried out to understand how performance management, and especially the balanced scorecard, could be used in alignment of business and IT strategies. To understand why alignment is important a semi-structured interview was carried out to interpret how business and IT responded to this question at PRASA. A comparative study was carried out between the business plan and annual report to understand the extent of alignment between business and IT as it relates to the performance measurement. The BSC was chosen as it is the most widely used performance management tool and is utilised by PRASA.

Research sub-question 5

Why is strategic alignment between business and IT a problem for PRASA?

The purpose of the question was to understand how PRASA addresses the problem of aligning business and IT strategies. Furthermore, the research attempted to find out why the alignment between business and IT is a problem in general, but also in particular how a newly formed company addresses aligning business and IT strategies and the problems they are encountering. A literature review was carried out to comprehend the extent of the alignment problem between business and IT strategies others have encountered. To address this sub-question an interpretive case study is carried out by means of a semi-structured interview and secondary data collection by means of studying the company's business plan and annual report to understand why this is a problem. The aim of the study was to understand to what extent alignment between business and IT strategies exists at the PRASA, to recommend ways to improve alignment between business and IT strategies, and thus to overcome the reasons for the fragmented and dysfunctional institutional arrangements.

1.4 PRIMARY RESEARCH AIMS

The aim of this research was to understand why the misalignment between business and IT strategies exists at PRASA. A further aim was to propose a guideline to manage alignment between business and IT strategies with the intention of overcoming the fragmented and dysfunctional institutional arrangements.

1.5 THE RESEARCH PROCESS

The research process followed was the "onion" as prescribed by Saunders,Lewis and Thornhill (2009). The ***research philosophy*** was interpretivism. The ***research approach*** was inductive. The ***research strategy*** was the case study approach. The ***time horizon*** was cross sectional. The ***data collection method*** was a semi-structured interview supported by secondary data.

1.6 RESEARCH DESIGN AND METHODOLOGY

It is important to gain an understanding of the dynamics within the organisation, the role they play and what they contribute towards the current fragmented and dysfunctional nature of PRASA. The research design chosen for the study is an interpretive case study. The philosophy of interpretive approach involved the researcher adopting empirical approaches which focus on human interpretations and meanings (Walsham, 1995). Interpretive research involves non- or anti-positivism in which facts and values are intertwined and hard to disentangle - both are involved in scientific knowledge - and normatism which takes the view that scientific knowledge is ideological and inevitably conducive to particular sets of social ends. Either of the latter two positions is open for the interpretive researcher to adopt. With the Legal Succession to the South Africa Transport Services (SATS) Act of 1989 forcing several initiations and their functions together, internal politics and the fear of change and the unknown makes the interpretive approach suited for this study.

The case study strategy, which is defined by Robson (2002) as "a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within real life context using multiple sources of evidence" has been chosen as the research strategy. It is also known as a triangulated research strategy (Tellis, 1997b). The case study strategy has been chosen because the need for triangulation arises from the ethical need to confirm the validity of the processes. In case studies, this could be done by using multiple sources of data (Yin, 2009). The rationale for using multiple sources of data is the triangulation of evidence, which increases the reliability of the data and the gathering process. In the context of data collection, triangulation serves to corroborate the data gathered from other sources. Yin (2009) identified six primary sources of evidence for case study research. These are documentation, archival records, interviews, direct observation, participant

observation and physical artefacts. The research used the following sources of data: documentation, archival records and results of interviews.

1.6.1 DATA COLLECTION DESIGN AND METHODOLOGY

Specific data collected was dependent on the research questions and the unit of analysis to obtain a rich set of data, and to capture the contextual complexity of the research (Benbasat,Goldstein and Mead, 1987). The primary data was obtained by means of semi-structured interviews of the business and IT managers at PRASA Western Cape. The secondary data was obtained from literature, the organisation's business plan and annual report.

1.6.2 DATA VALIDITY AND RELIABILITY

According to Babbie (2007) validity is 'a term describing a measure that accurately reflects the concept it is intended to measure'. Three forms of validity are identified, namely criterion related validity, construct validity and content validity.

Reliability relates to the quality of the measurement measure and if the same measures can be repeated in other similar research (Babbie, 2007). Methods used for cross-checking the reliability of the measures are the test-retest method, split-half method and using established methods (Babbie, 2007). Reliability and validity was assured by using the same semi-structured interview methods for all respondents.

1.7 ETHICS

Ethics deal with what is right and wrong. According to Babbie (2007), the most important ethical issues to deal with when carrying out research are:, voluntary participation - this is compulsory, whereby interviewees must participate of their own free will and not be coerced into participating; no harm to participants - care should be taken not to embarrass, endanger or cause any harm to participants; anonymity and confidentiality - this was ensured by writing a covering letter to participants in which their anonymity and confidentiality was guaranteed (appendix 1 addresses this issue); deception is discouraged - the intentions of the researcher were identified upfront by stating the purpose of the research.

1.8 RESEARCH ASSUMPTIONS

The study objective was to understand the extent of alignment between business and IT strategies at PRASA. The population comprised IT managers and business managers within PRASA Western Cape. The research assumption was that the organisation needs to

revaluate the strategic alignment between business and IT because of the current dysfunctional arrangement.

1.9 RESEARCH CONSTRAINTS

The following constraints apply to the research.

The research was limited to business and IT managers at PRASA Western Cape. The availability of the managers to participate in this research posed to be a constraint. Also, interviewing managers only might pose a problem, because the rest of the staff could have other opinions.

1.10 SIGNIFICANCE OF THE PROPOSED RESEARCH

Alignment between business and IT strategies has been problematic (Luftman & Kempaiah, 2007). This study provided a better understanding of the alignment issue in order to do further research into possible frameworks. Malta and Sousa, (2010) have shown that better performance can be attained if organisations are tightly aligned. The research started with identifying the strategic choice of the organisation, based on the strategic alignment model of (Henderson & Venkatraman, 1993). This was followed by a strategic alignment maturity assessment developed by Luftman (2001). Finally, performance measures described by the BSC was used to monitor progress in aligning business and IT strategies. One of the measurement perspective of the BSC is internal business processes. Bytheway, 2003 defines a business process as "a logical envelope that co-ordinates and gives purpose to business activities; generally where an activity delivers an output, a process delivers an outcome – a result that is evident to stakeholders outside the business as well as those within". This definition which describes the internal business process comprises two components namely a process and an activity which is described by Bytheway, 2003 as

• A business process is a high level component of a business that is comprised of a number of lower level business activities; it delivers value to organisational stakeholders.

• A business activity is a low level component of a business that makes up a part of a business process; it consumes resources and drives up costs.

The IMBOK framework describes alignment in terms of five management domains and that there a four points of alignment between the domains instead of the one point of alignment as generally argued (Bytheway, 2011). The internal business process management domain links the information systems to the business. The argument presented by Bytheway, 2011 is, if information systems projects do not deliver systems that are well supported by the technology, if systems do not support business processes, if business processes do not

deliver the performance improvements that are expected, and if those improvements are not what strategy demanded, then all will be in vain.

The contribution of this research was an increased understanding of the alignment between business and IT at PRASA, and proposed guidelines to assist PRASA in achieving the alignment needed in order to improve service delivery to the PRASA clients.

1.11 SUMMARY

This chapter has provided an introduction and orientation to the research. The structure of the research is depicted in chapter 1. Chapter 2 introduces the literature review, which produces the theoretical underpinnings for the research.

1.12 THESIS AND CHAPTER ANALYSIS

The thesis is divided into 5 chapters. The first chapter gives the background and context of research as well as the problem statement and research questions. Added to the research questions is the reasoning behind asking the questions. The aim of the study is followed by the research methodology and the contribution of the study. Chapter 2 is the literature review of the basic definitions needed for the study. It gives the theoretical framework from where the study is undertaken. Chapter 3 is the important methodology section explaining the methodologies and the reasons for choosing specific options. Chapter 4 addresses the data analysis and evidence derived from the case study. In chapter 5 the conclusions and recommendations are discussed. Finally, a bibliography and set of appendices are presented.

2 CHAPTER 2 LITERATURE REVIEW

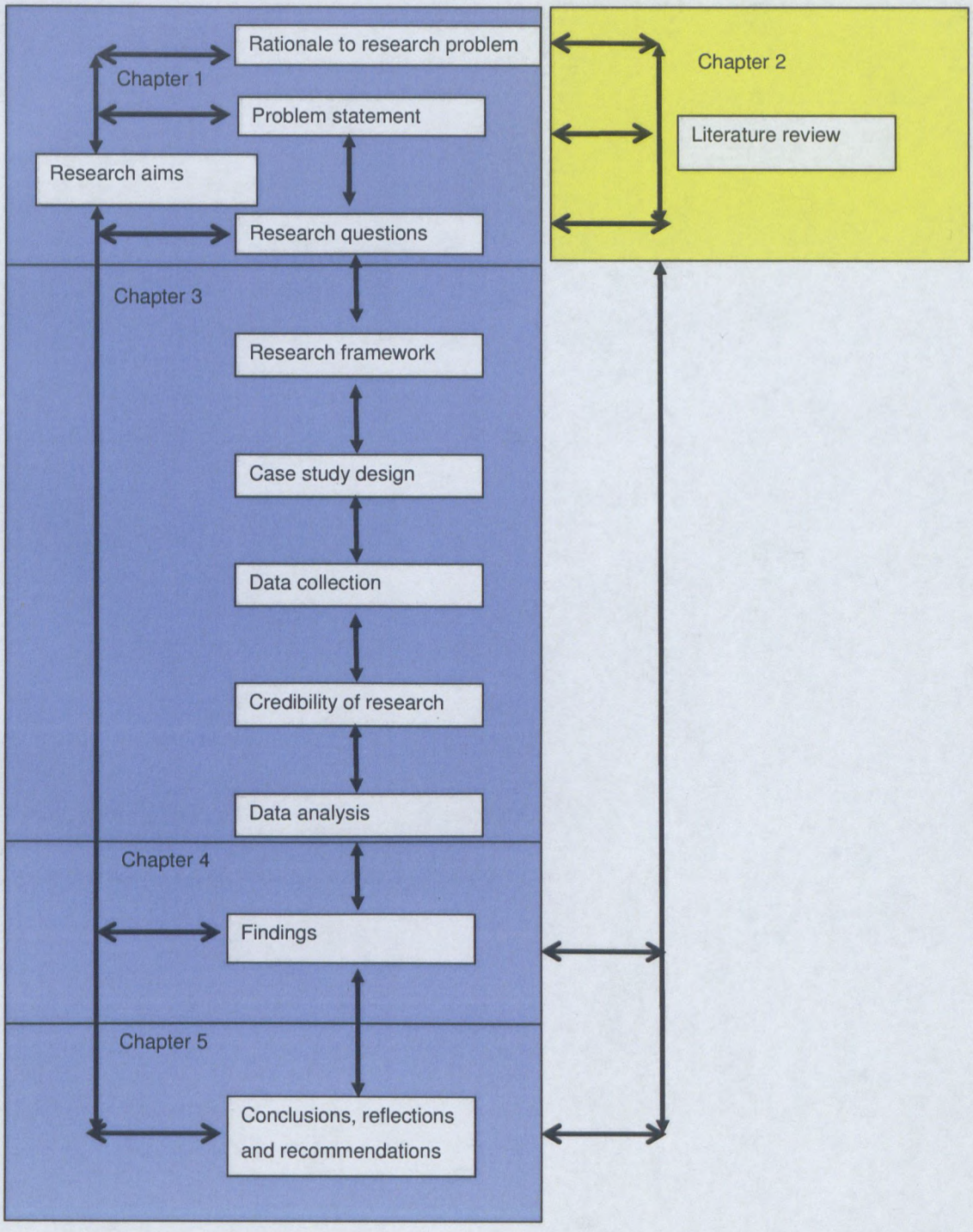


Diagram 2: The context of research

2.1 INTRODUCTION

For almost three decades practitioners, academics, consultants, and research organisations have identified "attaining alignment between IT and business" (Luftman & Kempaiah, 2007; Kalika & Walsh, 2010; Malta & Sousa, 2010; Nickels & Janz, 2010; Ross & Goswami, 2010) as a pervasive problem . Gutierrez,Orozco and Serrano (2008) added that despite the wide acceptance of the term "strategic alignment" (the integration of business and IT strategies), there was no consensus on how to achieve alignment. Furthermore, with few references that detail the process, there was no common agreement on the term alignment. Terminology such as linkage (Henderson & Venkatraman,1993) harmony, integrated, linked, and synchronicity (Luftman & Kempaiah, 2007) have been suggested and used . This topic has been extensively researched and Chan and Reich (2007a) published an annotated bibliography of over one hundred and fifty studies. Another widely accepted approach to improve alignment is enterprise architecture. Weiss, 2006 defines enterprise architecture as *"the process of translating business vision and strategy into effective enterprise change by creating, communicating and improving the key principles and models that describe the enterprise's future state and enable its evolution. The scope of the enterprise architecture includes the people, processes, information and technology of the enterprise, and their relationships to one another and to the external environment. Enterprise architects compose holistic solutions that address the business challenges of the enterprise, and support the governance needed to implement them."*

The literature review is based on the current research into alignment of business and IT strategies. It forms the basis for answering the research question, ***"How can PRASA manage strategic alignment between business and IT?"*** The literature review was also used to address the sub-questions. The three theoretical models in this research were derived from the literature research.

In the sections to follow, business and IT strategies, the divergent views on managing alignment between business and IT strategies, theoretical models for business and IT strategic alignment, as well as the challenges with aligning business and IT strategies are discussed. This is shown diagrammatically below.

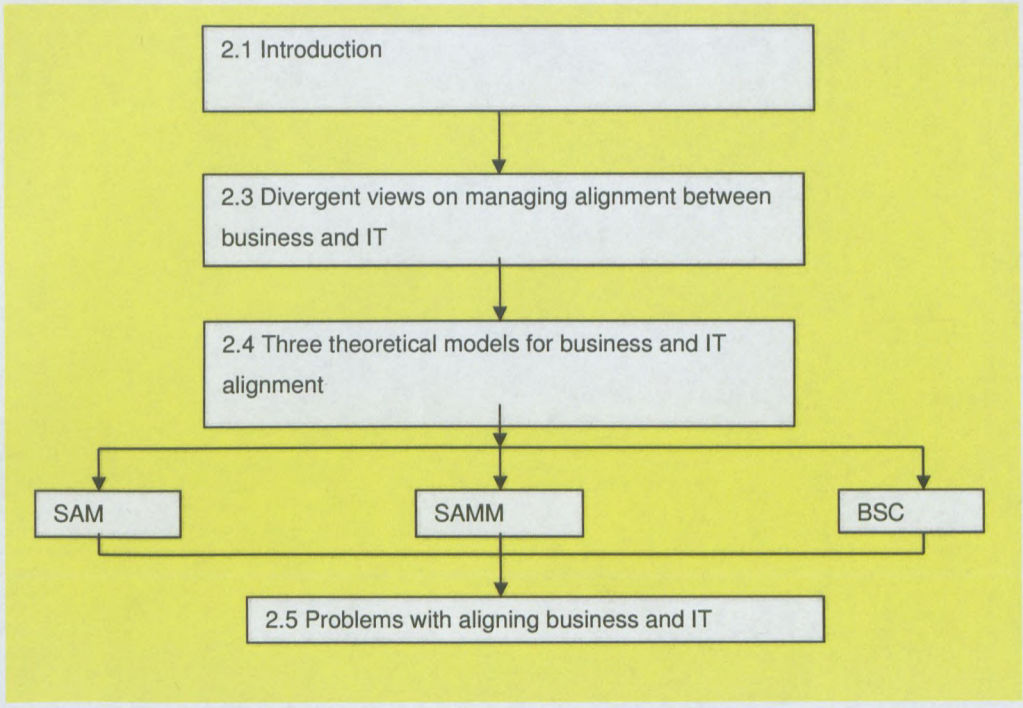


Diagram 3 Format of literature review depicting relevant sections

2.2 BUSINESS AND IT STRATEGIES

2.2.1 Strategy defined

Mintzberg (1994) pointed out that strategy is interpreted in different ways, the most common being in terms such as plan, pattern, perspective and position. According to Kaplan and Norton (2001a) strategy implies the movement of an organisation from its present position to a desirable but uncertain future position. Because the organisation has never been to this future position its intended pathway involves a series of linked hypotheses. It enables the strategic hypotheses to be described as a set of cause and effect relationships that are explicit and testable (Kaplan & Norton, 2006). The effectiveness of the approach is derived from its ability to clearly describe strategy (using strategy maps) and the ability to link strategy to the management system using the Balanced Scorecard (BSC). For this reason the BSC was chosen as a framework for a possible guideline to align business and IT strategies at PRASA. Hill and Jones (2008) defined strategy in terms of SWOT (strengths, weaknesses, opportunities and threats) analysis.

The steps they recommend to develop and implement strategies are:

- Select the vision, mission and values
- Analyse the organisation's external competitive environment to identify opportunities and threats
- Analyse the organisation's internal operating environment to identify the organisation's strengths and weaknesses
- Select strategies that build on the organisation's strengths and correct its weaknesses in order to take advantage of external opportunities and counter external threats. These strategies should be consistent with the vision, mission and values of the organisation. They should be aligned and constitute a viable business model .
- Implement the strategies

These steps are closely aligned with the SAM methodology. It links closely to the strategic fit (interrelationships) and functional integration between domains in the SAM model and the relationships with the external and internal environments of an organisation. It gives a sequence of steps that needs to be followed to implement strategies.

2.2.2 Business strategy

A definition of corporate strategy (which is synonymous with business strategy) presented by Andrews (1980) is :

> Corporate strategy is the pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organisation it is or intends to be, and the nature of the economic and non-economic contribution it intends to make to its shareholders, employees, customers, and communities.

Similarly, strategic (business) management is defined as the set of decisions and actions that result in the formulation and implementation of plans designed to achieve a company's objectives (Pearce & Robinson, 1988). Kay (1996) says that there is much debate on the substance but that most commentators agree that business strategy is concerned with the match between a company's internal capabilities and its external environment.

Croteau and Bergeron (2001) define business strategy as "the outcomes of decisions made to guide an organisation with respect to the environment, structure and processes that influence its organisational performance". This definition ties in with the objectives of the SAM model (Henderson and Venkatraman, 1993) which interacts with the environment via the external domain (strategic fit) and the structure via its functional integration. The SAM model is

dynamic and process based and this also links in with the strategy view of the BSC of Kaplan and Norton (2001a) which discusses strategy in terms of formulation and execution. Kaplan and Norton (2006) stated that the IT strategy gets aligned to business strategy through a portfolio of strategic IT services which is derived from the business strategy, negotiated with the business units and measured by the value adding contribution of IT. This is done by providing access to timely and accurate information, creating and supporting business unit partnerships and providing strategic support to the business for competitive advantage.

Partnership is also included as one of the six components of the SAMM model (Luftman and Kempaiah, 2007), defining IT's role in the business' strategies. These models (SAM, SAMM and BSC) are about aligning business and IT strategies and can be criticised because it does not clearly define what business strategy is. The SAM, SAMM and BSC are discussed extensively in section 2.4.

2.2.3 IT strategy

Gartner (2007) define IT strategy as "a discipline that defines the business value the IT organisation will deliver to the enterprise and the direction it will take to deliver". To do this they recommend that IT build a complete, business-success-focused IT strategy consisting of demand, control and supply. Well-crafted IT strategies demonstrate how IT will contribute to the success of the enterprise relative to its key business goals. The strategies also link major business missions and goals to IT initiatives.

Chen (2010) carried out an extensive review of literature on the concept of IT strategy, and came to the conclusion that as yet it is not fully understood. From this literature review Chen (2010) identified three IT strategy conceptions: (1) IT strategy as the use of IT to support business strategy; (2) IT strategy as the master plan of the IT function; and (3) IT strategy as the shared view of the IT role within the organisation. These conceptions form the IT strategy construct. A definition derived by Chen (2010) from this construct of IT strategy is "an organisational perspective on the investment in, deployment, use, and management of information systems". This supports the third concept which is the shared view of the IT role.

2.2.4 Alignment gap

Business and IT strategies may from time to time be out of synchronisation or may be misaligned. This misalignment is referred to as an alignment gap. No clear accepted definition of an alignment gap between business and IT strategy is found in the literature. Luftman and Brier (1999) mention inhibitors which hinder alignment. These inhibitors include: business and IT do not have a close relationship, prioritising is a problem for IT, IT rarely meets its commitments, lack of support for IT by senior executives and finally the lack of adequate

leadership in IT. They also mention companies striving to link business and technology and what the impact of misalignment might be if there is no harmony between business and IT.

A term linkage is used by Reich and Benbasat (1996) and is defined as "the degree to which the IT mission, objectives, and plans support and are supported by the business mission, objectives, and plans". This implies that where linkage is absent, business and IT would be misaligned.

Beer and Eisenstat (2000) stated that companies have long known that, to be competitive they must develop a good strategy and then appropriately realign structure, systems, leadership behaviour, human resources policies, culture values and management processes. They identified what they call the "the silent killers of strategy implementation and learning". Some of them are a top down but laissez-faire senior management style, an unclear strategy and conflicting priorities, an ineffective senior management team, also and importantly a poor vertical communication channel, poor co-ordination across functions and businesses and inadequate down-the-line leadership.

Further factors contributing towards the misalignment can take several forms, according to (Fonvielle & Carr, 2001). This can be where individuals believe its members are aligned, but in fact the individuals have different sets of goals, or could have the same goals but unstated disagreements on how the goals should be reached. It may also well be that warring camps exist within the organisation, ensuring that overall commitment to any chosen strategy is weak. A more relevant case is where an active opposition does not exist, but many group members are unconvinced of the need for, or the likely efficacy of, the proposed action. In other situations and cases people don't know what the goals of the organisation are.

According to Norton (2002) the reasons why a business strategy and IT strategy gap exists are poor strategy development, management, communication, lack of strategic focus within organisations, and no strategic management process. Rathnam,Johnsen and Wen (2004) used a case study to research why alignment gaps exist, the reasons for the alignment gap and the strategy for minimising the alignment gaps between business and IT. Although the authors talk extensively of alignment gaps in their research, they do not define the term. Their results suggest that improving business strategy vision and communication has the greatest potential for aligning business and IT strategies. Gartner (2008) states that aligning IT with the business is often one of the more frustrating and time-consuming experiences. Alignment is often seen as the business and IT operating in parallel worlds, maintaining a common direction, but separated by distance.

2.3 DIVERGENT VIEWS ON MANAGING ALIGNMENT BETWEEN BUSINESS AND IT STRATEGIES

This section presents the status of research into alignment between business and IT. Where possible, reference will be made to the three models to be used in this research. These three models are the SAM, SAMM and BSC. The reason for using these models is that they have been extensively researched, thereby proving their validity, and in the case of the BSC it is being used by the researched organisation.

2.3.1 Alignment terminology and definitions

There is no consensus on the terminology used in publications to define alignment between business and IT strategies. Terms like fit, harmony, linkage, fusion, congruence, synchronised and integration are frequently used synonymously with the term alignment (Henderson & Venkatraman, 1993;Reich & Benbasat, 1996;Luftman & Brier, 1999). These terms are also referenced in recent research by Marley (2009) and (Ross & Goswami, 2010).

Henderson and Venkatraman (1993) assert that alignment is the proportion of strategic fit, functional integration and positioning among the four domains of the SAM model, namely business and IT strategies together with business and IT infrastructures.

Reich and Benbasat (1996) describe alignment as "the degree to which the IT mission, objectives, and plans support and are supported by the business mission, objectives, and plans".

Luftman and Brier (1999) said alignment is "applying IT in an appropriate and timely way and in harmony with business strategies, goals and needs". The latter two definitions by the last two authors are very similar. None of these definitions speak specifically about measuring alignment, the basis of this research.

The BSC best practice of alignment supports these definitions as it seeks to translate the strategy into operational terms and also to ensure alignment throughout the organisation to the business strategy. Kaplan and Norton (2001a) discuss BSC alignment in terms of synergies created between business units and the corporate headquarters. Synergy means that the whole is greater than the sum of the individual parts. This synergy would ensure tighter alignment as the business units would be focused on a common goal or strategy.

According to Avison,Jones,Powell and Wilson (2004) alignment is seen to assist a firm in three ways: by maximising return on IT investment, by helping to achieve competitive advantage through IS, and by providing direction and flexibility to react to new opportunities.

These three ways show how IT will be utilised by a firm to assist with strategic alignment between its business and IT.

2.3.2 Alignment dimensions

Studying the literature reveals several dimensions (scope or magnitude) of alignment, for example, strategic/intellectual, structural, social and cultural. These are now discussed.

2.3.2.1 Strategic and intellectual dimensions of business and IT alignment

The intellectual dimension of business and IT alignment refers to how internally consistent and externally valid the business and IT plans are. These plans need to be formal and documented for alignment to occur. Intellectual dimension of business and IT alignment is described as "the state in which a high quality set of inter-related IT and business plans exist" (Reich & Benbasat, 2000). These plans are used to facilitate strategic alignment between business and IT, which assists the development of business and IT plans (Avison *et al.* 2004). The dimensions of strategic alignment refer to the extent to which the business and IT strategies, as well as business and IT plans, are in congruence with each other (Chan & Reich, 2007b).

Reich and Kaarst-Brown (2003) looked at how transferring IT personnel to other departments realised benefits in terms of intellectual capital (same as intellectual dimension concept). They found that there was an increase in IT knowledge when these IT employees were transferred to other departments. This led to retention of IT staff and also IT innovation. This sharing of intellectual capital, in this case the IT staff, led to better alignment between business and IT. Organisational advantages were realised from this intellectual dimension.

2.3.2.2 Structural dimensions

Bergeron,Raymond and Rivard (2001) found that more complex IT structures (the interrelation or arrangement of parts in a complex entity) are not necessarily superior to less complex IT structures, but that incremental structural complexity aligned with a risk-taking IT management can increase competitive advantage in terms of growth and profitability. This complex IT approach, which is incremental, is more entrepreneurial and risk-taking than less complex IT structures and lends itself to a decentralised IT structure. Structural alignment dimensions, according to Chan and Reich (2007b), refers to the extent of structural fit between IT and the business, and these may be centralised, decentralised or hybrid in nature.

2.3.2.3 Informal structure

Chan and Reich (2007b) found that the informal structure between IT and business managers was of utmost importance in improving business and IT alignment and performance. The

informal structure was defined by Chan and Reich (2007b) as "relationship-based structures that transcend the formal division of labour and co-ordination of tasks". This means that by improving the business and IT executive's informal relationships, alignment would be augmented. Chan and Reich (2007b) suggested that the organisation rather spend more time improving the informal structures than on aligning formal structures as this would be more enduring.

2.3.2.4 Social dimensions

Reich and Benbasat (1996) conducted a study of measurement issues associated with the social (relating to human society and its modes of organisation) dimension of linkage. They describe the social linkage as the understanding of business objectives and plans by the business and IT executives. As stated previously, linkage is used as a synonym for alignment. The key social linkages they researched were:

- Cross references between written IT and business plans. The business and IT plans are aligned and synchronised. For example, what is said in the business plan is referenced in the IT plans.
- Understanding of common objectives by IT and business executives. For example, the strategic objectives spelled out in the business are also reflected as an objective in the IT plan, and these are understood by both sets of executives.
- Shared vision among executives for long term objectives of technology deployment. The IT executives support the long term objectives of the business with the appropriate technology enablers.
- Executives' rating of the linkage of the social dimension. This is a cross functional assessment by both executives of the amount of social interaction between the two parties.

They wanted to understand how the short and long term measures of the social dimension of linkage impacted alignment. In the short term, the common objectives of executives and in the long term the shared vision,, were found to be the most promising measures of social linkage between business and IT executives. This is in stark contrast to the informal dimension described in section 2.3.2.3 as it is more formal in approach.

In a later study Reich and Benbasat (2000) researched the influence of the social dimension on alignment between business and IT. The outcome of the study was that in the short term the influence on the on alignment between business and IT was found to be shared domain knowledge, IT implementation success, communication between executives and IT planning. Shared domain of knowledge was found to influence the alignment between business and IT in the longer term. "The social dimension of understanding by executives links into enablers of business and IT alignment" (Luftman, Papp and Brier, 1999).

Reich and Benbasat (2000) referred to the social dimension as "the state in which business and IT executives within an organisational unit understand and are committed to the business and IT mission, objectives, and plans.

2.3.2.5 Cultural dimension

Burn (1997) proposed an organisational cultural audit (OCA) framework to examine the relationships between organisational (business) and IT strategy formulation processes. The OCA framework comprised two audit cultural checks; first an organisational strategy and structure, and secondly an IT strategy and structure audit. This OCA framework was used to research the interdependencies between business strategy and IT strategy and is similar to the SAM approach. The results of the research were that different stages of growth and development required different approaches to strategy.

Luftman (2001) stated that attaining a trusting environment between the businesses and IT, where risks are shared and innovation and entrepreneurship thrive, is essential to achieve improvements in diverse business cultures. This concurs with Burn's findings whereby different strategies evolve for different organisational configurations.

Sledgianowski and Luftman (2005) identified the following management cultural practices: cultural and social environment, pervasiveness of a change readiness culture, and innovation to assess an organisation's strategic alignment maturity to enhance alignment between business and IT strategies. This forms part of the skills component of the SAMM model whereby multiple methods for development of IT and business managers, including methods of on-the-job training, job rotation and job enrichment are structured.

Corporate culture is defined by Chan and Reich (2007b) as "the norms of behaviour and shared values that allow every organisation's employees, at every level, to work together successfully toward a common goal", meaning that all employees are aligned towards a common goal or strategy as prescribed by the BSC.

2.3.3 Levels of alignment

2.3.3.1 Strategic, tactical and operational levels

Kaplan and Norton (1996) showed that an organisation able to focus on its strategy is able to translate the strategy into operational terms. This ensures that all levels of the organisation, strategic, tactical and operational, are aligned when the strategy is translated into operational terms.

Tan and Gallupe (2006) found a linkage between business and IT at the operational level of alignment. Their research showed that the higher the level of shared cognition between the respective executives, the higher the level of alignment between business and IT, and vice

versa at the operational level. This is similar to the shared domain of knowledge perspective of the social dimension of alignment (Reich & Benbasat, 2000).

2.3.3.2 Internal versus external alignment

The authors of the **SAM** model recommended that the organisation interact with its external environment by means of strategic fit, which is the interrelationship between external and internal domains. Strategic fit refers to not only basic, but significant interaction of the business with the external environment. Henderson and Venkatraman (1993) suggest that IT strategy also has a role in interacting with the external environment. Internally the alignment is by means of functional integration (integration between functional domains). The predominant IT strategy is internally focused. Henderson and Venkatraman (1993) declare that IT strategy needs to be more externally focused for the organisation to gain competitive advantage.

Luftman and Kempaiah (2007) asserted that for **SAMM** to be optimised, IT should interact externally with the company's business partners and its customers and clients by extending its reach to accommodate the value chains of said customers and suppliers. This is does not happen as IT strategy is normally internally focused.

The BSC model allows for both the external as well as internal alignment by being able to translate the strategy into operational terms. This is done by translating the strategic objectives of the organisation in operational terms which can be measured and have targets set.

2.3.4 Organisational performance

IT alignment plays a key role in the business because of its potential impact on a firm's performance. Henderson and Venkatraman (1993) argue that the inability to realise value from IT investments is in part due to the lack of alignment between business and IT strategies. Furthermore, Henderson and Venkatraman (1993) state that economic value is dependent on management's ability to create strategic fit within the organisation. These views are accommodated in the SAM model. SAMM research by Luftman and Kempaiah (2007) found a positive correlation between business and IT alignment with regards to a firm's performance.

Using the strategic topology developed by Miles,Snow,Meyer and Coleman Jr (1978). Croteau and Bergeron (2001) found a positive link between strategic activities and organisational performance for organisations with prospector strategies, and a negative link for organisations with reactor strategies.

In a contrary view Tallon and Kraemer (2003) stated that there is little empirical evidence to prove the organisational benefits obtained from alignment. Tallon and Kraemer (2003) found

that alignment, in some cases, did not translate into an increase in business performance. In what they called the "alignment paradox", strategic alignment leads to increased performance up to a certain point and beyond this point performance decreases. This was ascribed to organisational inflexibility and environmental uncertainty. Organisations that are tightly aligned will not have the flexibility to react to change and to adapt during turbulent times.

Bergeron,Raymond and Rivard (2004) state that organisational performance is the result of fit between two or more factors, for example, strategy, technology, culture and the environment. Chan,Sabherwal and Thatcher (2006) found empirical evidence to prove that alignment improved organisational performance, but stress that "not all firms are equally served by allocating scarce resources to improve IT alignment".

Chan *et al.* (2006) indicate that there is no standard method for improving alignment and that organisational size, type of strategy and industry all had an influence on performance. Furthermore Preston,Chen and Leidner (2008) found that the level of the CIO's strategic decision-making authority leads to IT's contribution to organisational performance.

BSC was initially developed as a performance management tool (Kaplan & Norton, 1992). The BSC was developed to counter reliance by organisations on only financial performance measures.

2.3.5 Contingency perspective

The contingency theory refers to a basic relationship between two variables moderated by a contingency variable. According to Teo and King (1997) it is based on the idea that there is not a best way to achieve a "fit" between organisational factors such as IT policy and top management support. Results of studies carried out by Teo and King (1997) confirmed an evolutionary pattern of integration of business and IT planning from administrative, sequential, reciprocal, to full integration. Contingency theory, according to Chan and Reich (2007b) facilitates alignment when context and business factors fit together. These factors produce superior performance when integrated in certain contexts (Chan & Reich, 2007b). This is supported by Bechor and Glezer (2009) - the use of contingency theory to investigate the success of strategic information system planning (SISP) as a function of key success factors (KSF) with different approaches and contexts.

2.3.5.1 Industry

Among business firms, it would appear that prospectors and analysers have more to gain from aligning business and IS strategies (Miles *et al.* 1978). Chan *et al.* (2006) found that precursors to alignment were contingent to the industry in which the business operated. The key research contribution from Chan *et al.* (2006) was the empirical demonstration that the

importance of alignment, as well as the mechanisms used to attain alignment, vary by business strategy and industry. Furthermore, Chan *et al.* (2006) state that not all firms are equally well served by allocating scarce resources to improve IS alignment.

2.3.5.2 Organisational size

Chan *et al.* (2006) found that organisational size impacted private companies but had no influence on academic intuitions. This was because in academic institutions the leaders had similar qualifications as well as similar organisational structures and processes. This contrasts with large businesses which have more organisational slack to invest in aligning business and IS strategies than their smaller counterparts (Chan *et al.* 2006). To overcome the organisational slack in large organisations, Chan *et al.* (2006) suggest that managers invest more resources on specific alignment mechanisms.

2.3.5.3 Strategic orientation

Miles *et al.* (1978) defined a typology for business strategy whereby businesses are classified as prospector, analyser, defender or reactor. Croteau and Bergeron (2001) did an empirical study to identify various profiles of technological deployment related to various types of business strategy that best support organisational performance. Using the Miles *et al.* (1978) topology, they found that an outward technological profile had a positive impact on organisational performance for the prospector and analyser business strategy. The inward profile for technological deployment had and indirect impact on organisational performance for the prospector business strategy. Avison *et al.* (2004) research revealed a strong correlation between alignment and performance for prospectors and analysers, but not for defenders. Importantly, Chan *et al.* (2006) concluded that the type of business strategy approach had an impact on the relevance of alignment. Their study revealed that prospectors had a lower alignment than analysers.

2.3.5.4 Turbulence

Kaplan and Norton (2001b) stated that the BSC is not a measure project but a change management project. They found that several adopting companies using the BSC were experiencing turbulent times and that the need for change was to overcome the threat of failure and loss of jobs. An economic downturn and merger and acquisition brings about uncertainty, change and fear in the organisation (Gartner, 2007). Organisations with high levels of SAMM maturity recognised the need for an effective change management process whereby the IT and business work together effectively (Luftman & Kempaiah, 2007).

2.3.6 Process models of alignment

Henderson and Venkatraman (1993) describe alignment not as an event but as a process of continuous adaptation and change. In the following section a comparison is done between the classic versus the processual schools of thought.

2.3.6.1 Classic versus processual schools of thought

The classical school, Whittington (2001), has at its source a model of rational adaptation. The core ideas of that organisation are market driven and adapt to circumstances occurring in the external environment. IT is viewed as a source to be utilised according to the requirements of the external environment, recognising the contingencies of technology and its potential impact on business strategy.

Contrasting the classical view, Chan and Reich (2007b) state that the processual approach "excludes formal plans and methodologies, exposes hidden social values, political interest and structural inertia, which shape formal instruments of rationality and identifies the role of IT as a resource and an instrument for gaining power and not achieving adaptation".

Whereas the processual school advocates a focus on internal and power issues, the classical approach views IT as a resource to be deployed according to the needs and pressures of the external environment (Chan & Reich, 2007b).

2.3.6.2 Continuous management of specific organisational components

Henderson and Venkatraman (1993) identified four dominant alignment perspectives (SAM): strategy execution, technology transformation, competitive potential and service level with their related interrelationships. The interrelationship needs to be integrated among the factors. Service level (SAMM) agreements between IT and business are recommended by Luftman (2001). This entails entering into measurable agreements (BSC) with the business for IT service delivery. The highest level SAMM for service level agreements is when it is enterprise wide and involves external partners (Luftman, 2001). Sledgianowski and Luftman (2005) supported service level agreements and recommend continuous review of service level agreements between business and IT.

The BSC has four interrelated perspectives which are used in a cause and effect relationship for continual alignment of strategy to overcome a previous reliance on only financial outcomes as a key determinant of business performance and need to be continually assessed (Kaplan & Norton,1996). Luftman and Brier (1999) identified enablers and inhibitors of alignment and suggest that executives continually focus on those that would enable alignment, for example, executive support for IT, IT support for business development and IT understanding the business.

Continuous management of specific organisational components refers to the organisation identifying key processes for competitive advantage and continuously monitoring these processes to ensure objectives are met.

2.3.7 Modelling alignment over time

Modelling alignment over time include stages of growth, lead-lag and punctuated equilibrium models. These are now dealt with in the following sections.

2.3.7.1 Stages of growth

Henderson and Venkatraman (1993) assert that IT strategy was previously internally focused and mainly viewed as a support function. Business now recognises the strategic importance of IT. IT strategy focused on the external domain is now a feature of the growth of IT within the organisation (Silvius, de Waal and Smit, 2009). The IT strategy will interact with the external environment for competitive potential and service level agreements with external suppliers of IT services, as described in the SAM model.

Kaplan and Norton (2006) developed levels of excellence for their strategic management model, which was an advancement on the original BSC. It measures maturity in five perspectives: mobilise, translate, align, motivate and govern. The level of maturity reflects the growth of the organisation in meeting the requirements of this best practice strategic management model. In the alignment perspective they recommend that all in the organisation are aligned to the business strategy and this includes IT strategy.

Luftman and Kempaiah (2007) recognised that SAMM between business and IT will give the business competitive advantage. According to the authors the higher the level of maturity the more improved the alignment.

Stages of growth relates to how the pattern of strategic alignment reflects the interdependency between organisational configuration and the stages of IT growth. Thus the strategic maturity of alignment can be said to be related to the stages of growth and the level of alignment.

2.3.7.2 The lead-lag model

The lead-lag model posits that alignment is evolving and that organisations will alternate between leading change and catching up on change. The lead-lag alignment options of the BSC, SAM and SAMM are now dealt with. The BSC that Kaplan and Norton (1992) developed was meant to address the lead-lag implications. Specifically finance indicators were viewed as lag indicators and the other three perspectives (customer satisfaction, internal

business process and innovation and learning) as leading indicators of future organisational performance.

Henderson and Venkatraman (1993) stated that no single application, no matter how advanced or sophisticated, can deliver sustained competitive advantage to an organisation. Advantage is obtained when an organisation continually improves the IT functionality on a continuous basis. This leads an organisation in the quest for continuous improvement in IT functionality and the changing role of IT by utilising the SAM.

Luftman and Brier (1999) suggest that executives meet and brainstorm to identify the gaps in business and IT strategies. This leads to a prioritised list of IT projects that can enhance business opportunity. From this meeting leading indicators for can be identified to enhance business opportunity. The leading indicators for the SAMM are how the organisation intends improving on its strategic alignment maturity.

2.3.7.3 Punctuated equilibrium

Sabherwal,Hirschheim and Goles (2001) used a punctuated equilibrium model to investigate the dynamics of change in alignment through strategy interactions. The punctuated equilibrium model describes a long term or evolutionary change that is interrupted by short periods or revolutionary change. Sabherwal *et al.* (2001) found that revolutionary change affected long term change because managers do not recognise low alignment as a problem.

The revolutionary change needs a combination of the following interventions: environmental shifts, sustained low performance, influential outsiders, strong leadership and perceptual transformation to enhance alignment between business and IT strategies (Avison *et al.* 2004).

2.3.8 Measuring alignment

For Chan and Reich (2007b) the measurement of alignment is important as, for example, it allows practitioners to manage alignment more readily, and for academics it allows for reliable and valid measures if their alignment research is to be rigorous. Several different approaches have been used to assess alignment, including typologies and taxonomies, fit models, survey items, mathematical calculations and qualitative assessments (Chan & Reich, 2007b). However, they do not include the BSC as a measurement tool for alignment.

2.3.8.1 Typologies and taxonomies

Miles *et al.* (1978) identified four strategic types of organisations, namely: defenders, analysers, prospectors and reactors. These typologies which are deductive, intuitive groupings or classifications of phenomena were used to measure business strategy and predict the appropriate IT strategy and assess alignment (Chan & Reich, 2007b). Different

strategic types identified different approaches to IT strategy, for example, defenders use alignment for IT efficiency and analysers use alignment for IT flexibility.

Gutierrez *et al.* (2008) proposed a taxonomy structure, which was previously described by (Sabherwal & Chan, 2001) as groupings based on the results of intuitive, empirical analyses.. The taxonomy structure has theoretical and practical capabilities to support comparative mechanisms of analysis (Gutierrez *et al.* 2008). Insights into alignment assessments are achieved by means of six theoretical and six practical constructors.

2.3.8.2 Fit models

Venkatraman (1989) identified a conceptual model which is central to the study of strategic management, as well as six perspectives of strategic fit, namely: fit as moderation, mediation, matching, gestalts, profile deviation and co-variation. The problem Venkatraman (1989) identified was the inconsistent use of the perspectives. For example, researchers often used one perspective in a theoretical discussion whilst employing another in empirical research. Venkatraman's framework classifies these characterisations based on the number of variables in the equation, the degree of specificity of the functional form of alignment, and the presence or absence of a criterion variable. Baker,Cao,Jones and Song (2009) identified these six fit perspectives of alignment as an end state perspective. The end state perspective is linked to the process perspective in order to develop a measure of dynamic strategic alignment (Baker *et al.* 2009).The strategic maturity of alignment can be combined to create a measure of alignment (Baker *et al.* 2009)

2.3.8.3 Prescriptive measures for achieving alignment

Nickels (2004) found in the literature three recurring prescriptive measures for improving the achievement of better business and IT alignment. Those prescriptive measures involve strategically positioning IT within the organisation, linking and integrating IT and business strategic planning processes, and ensuring the congruence of strategic IT initiatives with the corporate vision. These prescriptive measures are accommodated in the SAM model.

2.3.8.4 BSC for measuring alignment

The BSC was used to measure the performance of the organisation to ensure alignment between business and IT strategies. Users of the BSC started applying the scorecard as a management system used to manage strategy (Kaplan & Norton, 1996). From this they introduced five principles of strategy-focused organisations to assist with aligning and focusing resources on strategy, namely:

- translate the strategy into operational terms
- align the organisation to the strategy

- make strategy everyone's everyday job
- make strategy a continual process
- mobilise change through executive leadership

These principles are dealt with extensively in section 2.4.5.

Kaplan and Norton (1996) identified four specific barriers to effective BSC implementation that have to be overcome:

- visions and strategies that is not actionable
- strategies that are not linked to departmental, team, and individual goals
- strategies that are not linked to long- and short-term resource allocation
- feedback that is tactical, not strategic

These four points address the lack of alignment and are barriers to strategic implementation. To overcome these barriers the author suggests using the five principles of a strategy-focused organisation, which is dealt with in section 2.4.5.

Van der Zee and De Jong (1999) stated that the BSC could be a valuable contributor to the implementation of an integrated business, and an IT planning and evaluation process. They identify two main problems in business and IT management namely the time lag between business and IT planning and the lack of "common language" between business and IT. They recommend the BSC to resolve these problems for the following reasons:

- Business and IT management can use the same "performance measurement" language, thereby integrating IT planning and evaluation fully into the business context.
- The BSC introduces overall goals and quantified norms for the whole business, including IT.
- Integrating the business and IT management processes eliminates, or at least considerably reduces, the time lag between the two.

Braam and Nijssen (2008) distinguished between the BSC as a performance measurement system and as a strategic management system. Their research revealed that top management involvement and the influence of the finance department are critical for both implementations of the BSC. Braam and Nijssen (2008) researched the two implementations of the BSC in terms of three antecedents, namely, leadership characteristics of the organisation's management, internal organisational characteristics, and external company characteristics. They found that the usage of the BSC as a strategic management system ensured alignment. This distinction had been previously identified by Kaplan and Norton (1996) who stated that the strategy of an organisation had to be translated into operational

terms for it to be executed. To do this, the strategy must first be formulated and then operationalised (Kaplan & Norton, 1996).

The degree of alignment has traditionally been measured as an end state using factor or variance models, where antecedents, outcomes of alignment and dynamic strategic alignment can be measured (Baker *et al.* 2009).

2.3.9 Factors that contribute to an improved alignment between business and IT strategies

Luftman and Brier (1999) and Rathnam *et al.* (2004) suggest the following to improve alignment between business and IT strategies (Table 1). Table 1 provides a guideline of practices that can be adopted to ensure the continuous improvement of alignment firstly by addressing IT issues in the first column and then the business contribution in column two. These two approaches would then need to be integrated to ensure alignment between business and IT strategies..

Table 1 Business and IT strategies are improved by aligning the two strategies

Luftman et al. (1999)	Rathnam et al. (2004)
• Senior executive support for IT •IT involved in strategy development • IT understands the business • Business partnership • Well-prioritised IT projects • IT demonstrates leadership	• Improve the business strategy development process • More collaborative strategy development between IT and business departments • Define when and how new technology is introduced into strategy development discussions • Restructure the organisation to ensure focus on enterprise needs (e.g. structure the organisation around business processes) • Build a business architecture • Use a centralised IT organisation • Include a CIO at the executive council level

2.3.9.1 Using the theoretical models to improve alignment

The SAM will be used to identify the type of strategic alignment perspective PRASA currently has.

The SAMM will be used to identify the strategic alignment maturity level between business and IT at PRASA.

These two models will provide input into the third model, the development of the BSC, to measure alignment between business and IT strategies at PRASA.

All these models require the input and collaboration of both business and IT executives for enhancing strategic alignment between business and IT.

2.3.9.2 Summary

As can be observed from the extensive literature review on the alignment between business and IT there are many approaches. This research will concentrate on the understanding of alignment between business and IT strategies. There is little or no research on the integrated usage of the SAM, SAMM and BSC models to measure alignment. As these three models have been chosen to be used in the research, they will now be discussed.

2.4 THREE THEORETICAL MODELS FOR BUSINESS AND IT STRATEGIC ALIGNMENT

2.4.1 Introduction to the three models

To improve the strategic management of information technology (Henderson & Venkatraman, 1993) developed the Strategic Alignment Model (SAM) framework. This model was defined in terms of four fundamental domains of strategic choice, namely, business strategy, information technology strategy, organisational infrastructure and processes, and information technology infrastructure and processes. The model is also defined in terms of two fundamental components of strategic management, namely, the strategic fit (the interrelationship between external and internal components) and functional integration (integration between business and functional domains). Strategic fit and functional integration can be interpreted as ensuring alignment within the external domain and the internal domain respectively. The SAM model is the mostly widely cited strategic alignment model for business and IT strategies (Leonard, 2008). Significant work is still being done in this area - see table below.

Table 2 SAM model research (Buckby,Best and Stewart (2009)

Study	Method (s)	Organisations/ subjects	Issues examined/ domain	Results
Beimborn,Franke,Wagner and Weitzel (2007)	• Case studies • Interviews	• 4 branches of a retail bank • Bank management	• Tested for links to recent alignment literature • Assessed the impact of strategic alignment on system usage and success of business processes • Drew on knowledge from SAM model	• Found that IS usage is directly linked to strategic alignment between business and IT units and internal alignment between organisational units • Found that IT staff did understand business needs
Bricknall,Darrell,Nilsson and Pessi (2007)	• Case study	• Astra Zenaca (AZ)	• Compared the balanced scorecard of this organisation to SAM model and the traditional balanced scorecard model (Kaplan & Norton, 1992) • Analysed alignment in	• Found a weak match to the balanced scorecard • Found stronger links between business and IT strategies • Did not find a strong match to principles of SAM model

			the case study organisation in considerable detail	
Avison *et al.* (2004)	• Model testing • Framework development • Case study	• Financial services firm in Australia	• Tested Strategic Alignment Model (SAM) (Henderson & Venkatraman, 1993) by applying data from completed projects to determine the usefulness of this model	• SAM model found to have conceptual and practical value • Proposed a practical framework that allows management to determine current alignment levels
Smaczny (2001)	• Model development	• No data	• Considered whether Henderson (1990) Strategic Alignment Model (SAM) is still applicable • Detailed literature review of strategic alignment models I	• Proposed that fusion be considered the future method of aligning business-IT • Considered SAM model out of date as sequential in orientation.

Luftman (2001) improved on the SAM model by developing the Strategic Alignment Maturity Model (SAMM).This model measures business/IT alignment maturity. Six interrelated components for assessing alignment maturity are identified. These are communications, value, governance, partnership, scope, and architecture and skills. The scores an organisation achieves for these six components of maturity are then compared to a five-level maturity model to denote the organisation IT-business alignment maturity (Luftman, 2001).The levels range from one to five where five is the highest level of maturity. This model is still of significance as can be seen by the examples in table 3.

Table 3 Examples of use of the SAMM model (Buckby *et al.* 2009)

Study	**Method (s)**	**Organisations/ subjects**	**Issues examined/ domain**	**Results**
van Lier and Dohmen (2007))	• Model development • Case study	• 6 organisations	• Discussed the links between benefits management and strategic alignment and their influence on IT outsourcing • Discussed models for each of the issues • Used maturity models of Luftman (2001) to assess strategic alignment	• Found that case studies with higher strategic alignment and benefits management are linked to IT outsourcing success
Silvius (2007)	• Model development • Focus groups • Hypothesis development	• 23 Chief Information Officers and IT managers from trade, manufacturing and financial	• Discussed importance of strategic alignment for organisations • Presented a	• Presented practical strategic alignment issues identified in focus group

	and testing • Pilot study participants	companies in the Netherlands • 12 Dutch firms participated in pilot study	series of theoretical models identifying different aspects of strategic alignment • Developed four hypotheses for testing by pilot study participants	discussions • Identified strategic alignment maturity levels for pilot study participants • Discussed the difficulties with strategic alignment in practice
Sledgianowski and Luftman (2005)	• Case study • Measurement tool development	• International specialty chemicals manufacturer	• Strategic Alignment Maturity Assessment (SAMA) framework applied to case study organisation to measure level of strategic alignment across six criteria	• Compared initial strategic alignment assessments to the follow-up assessments • Cash flow, debt levels and employee numbers all showed improvements due to measurement tool being applied to organisation

Aligning performance measures to strategic goals is a critical step (Fonvielle & Carr, 2001). A tool used to measure performance and to align strategic goals within organisations is the BSC. The BSC was developed by Kaplan and Norton (1992) to overcome the business' reliance on financial measures. They contend that reliance on only financial measures does not give a complete overview of the organisation's measures. The BSC provided a framework to look at strategy, used for value creation from four different perspectives, these being financial, customer, internal business process, and innovation and learning (Kaplan & Norton, 1992).

Kaplan (2008) produced the conceptual foundation for the BSC, showing how the BSC has evolved over time. The BSC has been so widely accepted and effective that the *Harvard Business Review* recently hailed it as one of the 75 most influential ideas of the twentieth century (Stenzel,Cokins and Schubert (2010). Examples of recent research are depicted in table 4.

Table 4 Example of recent BSC research

Study	Method(s)	Organisations/ subjects	Issues examined/ domain	Results
Van Grembergen,De Haes and Van Brempt (2007)	• Delphi method	• Financial industry participants	• Examined links between business goals, IT goals and IT processes • Considers validation of business and IT goals identified in pilot study • Considered balanced scorecard perspectives to break up goals • Considered how IT goals contribute to business goals	• Produced a reviewed and prioritised list of IT goals and business goals • Three important IT goals were part of the corporate contribution perspective • Business goals under the financial perspective were included
Bricknall *et al.* (2007)	• Case study	• Astra Zenaca (AZ)	• Compared the balanced scorecard of this organisation to SAM model and the traditional balanced scorecard model (Kaplan and	• Found a weak match to balanced scorecard • Found stronger links between business and IT strategies

			Norton,1992) • Analysed alignment in the case study organisation in considerable detail	• Did not find a strong match to principles of SAM model

One of the principles recommended by Kaplan and Norton (1992) was that for an organisation to be focused on strategy, there needs to be alignment among departments to the strategy of the organisation. The alignment sequence they recommended starts when the corporate headquarters articulates enterprise value propositions that will create synergies among operating units, support units and external partners. The sequence includes aligning IT strategy with the business strategy. Table 5 below shows alignment problems identified by the three models described above. These models will form the basis of this research.

Table 5 Problems with alignment in the various alignment models

Model	Alignment problems
SAM	Inability to realise value from IT investments is, in part, due to the lack of alignment between business and IT strategies
SAMM	Alignment is frequently focused only on how IT is aligned with the business and not vice versa. The organisation only sought one method to improve alignment and there is no effective tool to gauge maturity of IT business alignment.
Balanced Scorecard	Surveys reveal that the greatest gap occurs in organisation alignment when compared to other strategic management problems.

2.4.2 The strategic alignment model (SAM)

From the initial literature review into alignment between business and IT, one model was continually cited. The SAM model was used as the foundation for this research, and it is now explained.

Henderson and Venkatraman (1993), architects of the SAM model, developed it to conceptualise and address the emergence of strategic management in IT. The SAM model was defined in terms of four essential domains of strategic choice, namely, business strategy, information technology strategy, organisational infrastructure and processes, and information technology infrastructure and processes. The power of the SAM model was illustrated in terms of two essential characteristics of strategic management, namely, the strategic fit (the

interrelationship between external and internal components) and functional integration (integration between business and functional domains). This is depicted in figure 1.

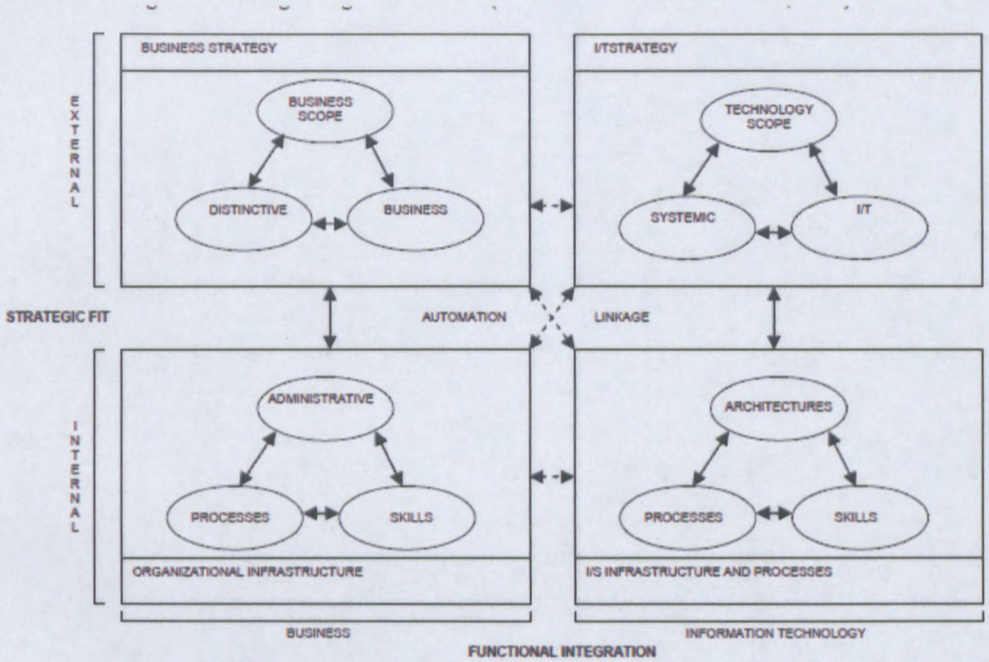


Figure 1 The SAM model (Henderson & Venkatraman, 1993)

Strategic Fit

Chorn (1991) researched strategic fit in terms of competitive situation, strategy, organisation culture and leadership. His research revealed that superior performance was obtained from those businesses with a high degree of alignment between the four elements mentioned above. Similarly and importantly Henderson and Venkatraman (1993) assert that no single IT application can deliver a sustained competitive advantage, and that this competitive advantage is obtained through the capability of an organisation to exploit IT functionality on a continuous basis. This continuous basis means that there must be a continual review of the strategic fit position within the organisation.

Henderson and Venkatraman (1993) contended that the concept of strategic alignment is based on two fundamental assumptions. Firstly, that economic performance is directly related to the ability of management to create a **strategic fit** between the position of the organisation in the competitive product-market arena (the external domain) and the design of an appropriate administrative structure to support its execution (the internal domain). Secondly, that the strategic fit in both the external and internal domains are inherently dynamic and thus a process and not an event. In this dynamic process scenario, strategic fit must be obtained

externally as well as internally to obtain competitive advantage. They argue that the inability to realise value from IT investments is in part due to lack of alignment between business and IT strategies of organisations. These strategies are viewed as involving both strategy formulation (decisions pertaining to competitive product market choices) and strategy implementation (choices that pertain to the structure and capabilities of the firm to execute its product market choices) and there needs to be alignment between formulation and implementation.

Henderson and Venkatraman (1993) said that IT strategy should be articulated in terms of an external domain and internal domain - internal domain of IT strategy has to date dominated and the external domain of IT strategy has hardly been explored. As IT emerged as a critical enabler (and not just a cost centre) of business transformation with capabilities to deliver firm level advantages, it is imperative to pay attention to the external domain of IT strategy. Their field research clearly indicates that the inadequate fit between external and internal domains of IT is a major reason for the failure to derive benefits from IT investments.

Strategic fit had been researched and empirically supported at the firm level (Thrasher (2008). Thrasher (2008) extended the theory of strategic fit to the inter-organisational network, suggesting that strategic fit may be even more critical at the network level than at the firm level. The strategic fit of inter-organisational network will play a key role in e-commerce and as such will require researchers to develop solid, theoretical models to better inform the IT community regarding the value of IT and strategic fit at this level of analysis (Thrasher, 2008).

2.4.2.1 Functional Integration

Functional integration in the SAM model depicts the relationships between the strategic perspective and the management of function within an organisation (Henderson and Venkatraman (1989 & 1993). According to Henderson and Venkatraman (1993) the first type functional integration relates to the integration of the position of the business in the competitive external market and the position of IT within this external marketplace. This positioning and integration enabled the realisation of IT investments. Nickels (2004) agreed that strategically positioning IT within the organisation ensured that support for the business strategy drove the acquisition and uses of new IT technologies and services, and not the converse. He also stated that the CIO plays a pivotal role in strategically positioning IT in this scenario.

The second type of functional integration is the alignment of the business and IT infrastructures and processes. The IT infrastructure influences and is influenced by the organisational infrastructure. Thus, there is the need to integrate the IT strategy and the business strategy, and vice versa. Two types of integration are identified, namely, strategic integration, which is the link between business and IT strategies reflecting the external

components, and operational integration, linking internal domains (IT and organisation infrastructure and processes) (Henderson & Venkatraman, 1993).

Besides the two dimensions of functional integration, Henderson and Venkatraman (1989) recommend cross domain alignment, which entails aligning business strategy with IT infrastructure. The cross domain was introduced as neither strategic integration nor functional integration were sufficient to align an organisation effectively (Henderson & Venkatraman, 1993). Avison *et al.* (2004) state that this multivariate co-alignment addresses strategic as well as functional integration. In the cross domain alignment perspective the multivariate alignment occurs only when three of the four domains are in alignment.

Although the SAM model recognises the need for continual alignment through strategic fit and functional integration, it does not provide a practical framework to implement this (De Haes & Van Grembergen, 2004). The BSC model provides this practical framework as will be elaborated on later in this chapter.

2.4.2.2 Four alignment perspectives of the SAM Model

The SAM model identifies four alignment perspectives for strategic fit and functional integration. These are now described. For reference, see figure 1.

2.4.2.3 Business strategy as driver

The first perspective is that of business strategy as the driver, and the first two cross domain relationships arise when business strategy serves as the driving force.

Strategy execution

In this domain business strategy has been articulated and is the driver of both organisational design choices and the design of IT infrastructure (see figure 2). This is the most common and widely understood perspective.

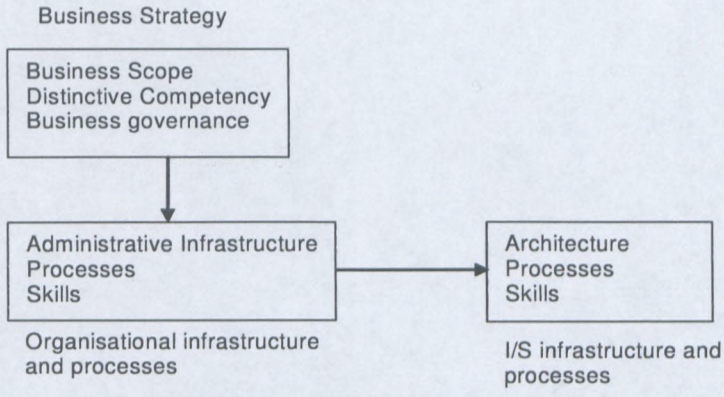


Figure 2 Business strategy as driver (Henderson & Venkatraman, 1993)

The strategic execution perspective reflects the perspective that business strategy should be the driver for both organisational design and IT infrastructure choices. Table 6 reflects the key perspectives of the strategic execution perspective. This table reflects the strategic perspective, the main driver for this perspective, the role that top management plays in this perspective , the role played by IT management and finally the type of performance criteria expected from this perspective. In this case business is the driver and formulates the strategy. IT's role is to implement the strategy formulated by the business. In this scenario IT is seen as cost or service centre.

Table 6 Strategic execution perspective of the SAM model

Perspective	**Driver**	**Role of top management**	**Role of IS management**	**Performance criteria**
Strategic execution	Business strategy	Strategy formulator	Strategic implementer	Cost/service centre

Technology transformation

As shown in figure 3 this alignment perspective involves the assessment of implementing the chosen business strategy through appropriate IT strategy and the articulation of the required IS infrastructure and processes.

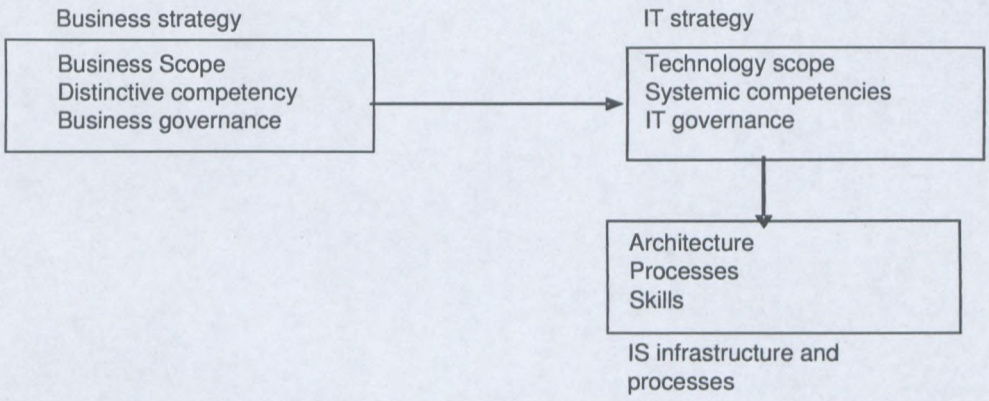


Figure 3 Technology perspective (Hendersen & Venkatraman, 1993)

The technology potential perspective focuses on developing an IT strategy in response to a business strategy, and defining the corresponding IT infrastructures and processes. Table 7 reflects the technology transformation perspective. This table reflects the strategic perspective, the main driver for this perspective, the role that top management plays in this perspective, the role played by IT management and finally the type of performance criteria expected from this perspective. In this case business is the driver and is the technology visionary. IT's role is to provide the technology architecture. In this perspective the company is a technology leader.

Table 7 Technology transformation perspective of the SAM model

Perspective	Driver	Role of top management	Role of IS management	Performance criteria
Technology transformation	Business strategy	Technology visionary	Technology architect	Technology leadership

2.4.2.4 IT strategy as an enabler

The next two cross domain relationships arise when management explores how IT might enable new or enhanced business strategies with corresponding organisational implications.

Competitive potential

As shown in figure 4, this alignment perspective is concerned with exploitation of emerging IT capabilities to impact new product and services (business scope), influence key attributes of strategy (distinctive competencies), and develop new forms of relationships (business governance).

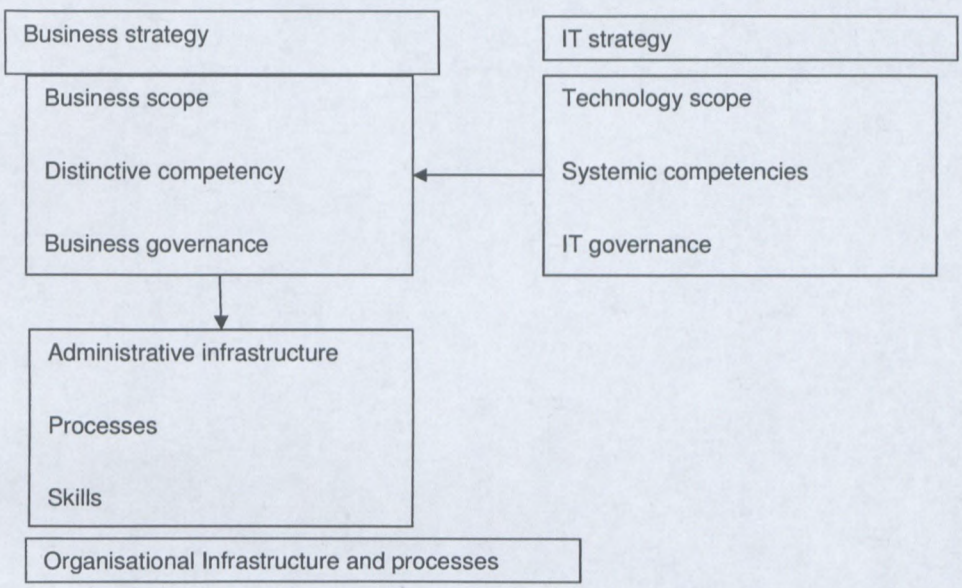


Figure 4 Competitive potential perspective (Henderson & Venkatraman, 1993)

The competitive potential perspective focuses on the exploitation of emerging IT capabilities to impact new products and services, influence key attributes of strategy, and develop new forms of relationships. Table 8 reflects the competitive potential perspective.

This table reflects the strategic perspective, the main driver for this perspective, the role that top management plays in this perspective, the role played by IT management and finally the type of performance criteria expected from this perspective. In this case IT strategy is the driver and formulates the strategy. Businesses role is that of business visionary. In this scenario IT is seen as a catalyst and the performance criteria of IT is that of business leadership.

Table 8 Competitive potential perspective of the SAM model

Perspective	Driver	Role of top management	Role of IS management	Performance criteria
Competitive potential	IT strategy	Business visionary	Catalyst	Business leadership

Service Level

As shown in figure 5, this alignment perspective focuses on how to build a world class IS service organisation. It requires an understanding of the external dimensions of IT strategy with corresponding internal design of the IS infrastructure and processes. This strategic fit for IT creates the capacity to meet the needs of IS customers.

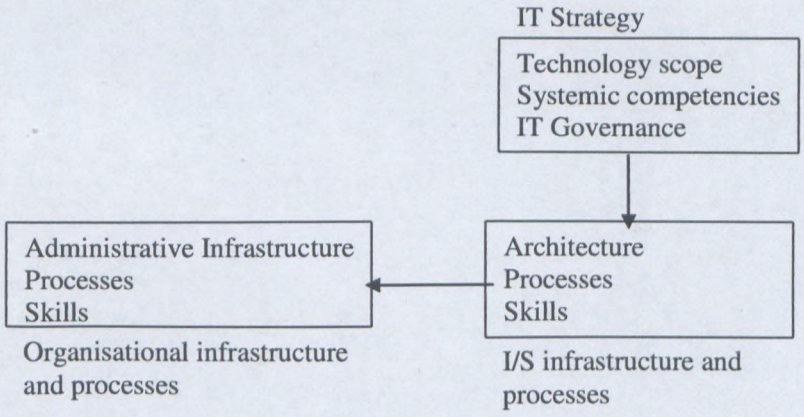


Figure 5 Service level perspective (Henderson & Venkatraman, 1993)

The service level perspective focuses on building a world-class IT service organisation. Table 9 reflects the service level perspective. This table reflects the strategic perspective, the main driver for this perspective, the role that top management plays in this perspective, the role played by IT management and finally the type of performance criteria expected from this perspective. In this case IT strategy is the driver and formulates the strategy. Businesses role is that of prioritizer. In this scenario IT is seen as providing executive leadership and the performance criteria of IT is that of providing customer satisfaction. Shi (2007) showed that IS

leadership positively impacts IS performance by driving other IS competences in the service level perspective.

Table 9 Service level perspective of the SAM model (Henderson and Venkatraman (1989)

Perspective	Driver	Role of top management	Role of IS management	Performance criteria
Service level	IT strategy	Prioritiser	Executive leadership	Customer satisfaction

2.4.3 The development of the Strategic Alignment Maturity Model

2.4.3.1 The enablers and inhibitors of business/IT alignment

Luftman and Brier (1999) modified the SAM model by identifying twelve alignment components from the SAM model. The relationship between these twelve alignment components defines business/IT alignment (Luftman & Brier,1999). An assessment tool was developed to address the alignment of business and IT in firms by identifying the strengths and weaknesses related to the business/IT alignment, and by utilising the relationships between the twelve alignment components from the SAM model. These twelve alignment components are:

2.4.3.2 Business Strategy

Business scope includes the markets, products, services, groups of customers/clients, and locations where an enterprise competes, as well as the competitors and potential competitors that affect the business environment.

Distinctive competencies - the critical success factors and core competencies that differentiate a firm from its competitors by providing it with a potential competitive edge. This includes the chosen strategy, marketing the brand, internal and external research, manufacturing and product development, cost and pricing structure, and sales and distribution channels.

Business governance entails how companies set the relationship between management, stockholders, and the board of directors. Also included are how the company is affected by government regulations, and how the firm manages its relationships and alliances with strategic partners.

2.4.3.3 Organisational infrastructure and processes

Administrative structure - the way the firm organises its businesses. Examples include centralise, decentralise, matrix, horizontal, vertical, geographic, federal and functional structures.

Processes - how the firm's business activities (the work performed by employees) operate or flow. Major issues include value added activities and process improvement.

Skills - human resource considerations such as how to hire/fire, motivate, train/educate, and culture.

2.4.3.4 IT strategy

Technology scope - the important information software, applications and technologies used.

Systemic competencies - those capabilities (e.g., access to information that is important to the creation/achievement of a company's strategies) that distinguishes the IT services.

IT governance - how the authority for resources, risk, conflict resolution, and responsibility for IT is shared among business partners, IT management, and service providers. Project selection and prioritisation issues are included here.

2.4.3.5 IT infrastructure and processes

Architecture - the blueprint for describing the enterprise architecture for the business (includes business, information and technology priorities).

Processes - those practices and activities carried out to develop and maintain applications and manage IT infrastructure.

Skills - IT human resource considerations such as how to hire/fire, motivate, train/educate, and culture.

From these twelve components of alignment, Luftman and Brier (1999) carried out a survey to identify the enablers and inhibitors that hinder alignment. Based on this survey, they identified the six most important enablers and inhibitors in rank order. These are shown in Table 10.

Table 10 Comparison of enablers and inhibitors (Luftman *et al.* 1999)

ENABLERS	INHIBITORS
Senior executive support for IT	IT/business lack close relationships
IT involved in strategy development	IT does not prioritise well
IT understands the business	IT fails to meet commitments
Business/IT partnership	IT does not understand business
Well-prioritised IT projects	Senior executives do not support IT
IT demonstrates leadership	IT management lacks leadership

As can be seen in table 10, the same set of topics (executive support, understanding the business, IT business relations and leadership) shows up as both an enabler and an inhibitor.

From the survey results Luftman and Brier (1999) produced a six step approach to make alignment work in any organisation, namely, set the goals and establish the team, understand the business/IT linkage, analyse and prioritise gaps, specify the actions (project management), choose and evaluate success criteria and sustain alignment.

2.4.4 The strategic alignment maturity model (SAMM)

Luftman (2001) developed the SAMM model methodology for assessing a company's alignment. The model is based on the Capability Maturity Model developed by Carnegie Mellon's Software Engineering Institute, but focuses on a more strategic set of business practices. Six interrelated components, together with criteria for assessing alignment maturity, were identified (Luftman & Kempaiah, 2007).

Communication measures the effectiveness of the exchange of ideas, knowledge, and information between IT and business organisations, enabling both to clearly understand the company's strategies, plans, business and IT environments, risks, priorities, and how to achieve them. The alignment criteria for communication are understanding the business by IT, understanding of IT by business, inter/intra-organisational learning, protocol rigidity, knowledge sharing and liaison effectiveness.

Value uses balanced measures to demonstrate the contributions of information technology and the IT organisation in terms that both the business and IT understand and accept. The alignment criteria for value are IT metrics, business metrics, balanced metrics, service level agreements, benchmarking, formal assessment/reviews and continuous improvements.

Governance defines who has the authority to make IT decisions and what processes IT and business managers use at strategic, tactical and operational levels to set priorities to allocate IT resources. The alignment criteria for governance are business strategic planning, IT

strategic planning, organisational structure, budgetary control, IT investment management, steering committees and prioritisation processes.

Partnership gauges the relationship between a business and IT organisation, including IT's role in defining the business strategies, the degree of trust between the two organisations, and how each perceives the other's contribution. The alignment criteria for partnership are business perception of IT value, role of IT in strategic business planning, shared goals, risk, rewards/penalties, IT programme management, relationship/trust style and business sponsor/champion.

Scope and architecture measures IT's provision of a flexible infrastructure, its evaluation and application of emerging technologies, its enabling or driving of business process changes, and its delivery of valuable customised solutions to internal business units and external customers and partners. The alignment criteria for communications are traditionally enabler/driver external, standards articulation, architectural integration (functional organisation and enterprise), architectural transparency, flexibility and managing emerging technology.

Skills measure human resources practices, such as hiring, retention, training, performance feedback, encouraging innovation and career opportunities, and developing the skills of individuals. It also measures the organisation's readiness for change, capability for learning, and ability to leverage new ideas. The alignment criteria for skills are innovation, entrepreneurship, locus of power, management style, change readiness, career crossover, education, cross training and social, political and trusting environment.

The levels range from level one to level five where level five is the highest level of maturity. A higher alignment maturity correlates with higher firm performance measures (Luftman (2001).

2.4.5 The Balanced Scorecard

The balanced scorecard (BSC) had its origins in 1990, in a one year KPMG-sponsored multi-company study called "Measuring performance in the Organisation of the future". David Norton served as the study leader and Robert Kaplan, a Harvard University professor, as an academic consultant. The study was motivated by a belief that existing performance measurement approaches, primarily relying on financial accounting measures, were becoming obsolete (Kaplan & Norton,1996).The BSC evolved from this project and was summarised by Kaplan and Norton (1992) in "The Balanced Scorecard--Measures That Drive Performance". They contended that traditional financial performances, which worked well in the industrial era, were out of step with modern company requirements. The requirements of modern organisations are "balanced" between financial and operational measures.

The BSC allowed managers to look at the business from four important perspectives, namely:

- customer satisfaction perspective (how do customers see us?)
- internal business perspective (what must we excel at?)
- innovation and learning perspective (can we continue to improve and create value?)
- financial perspective (how do we look to shareholders?)

The BSC reflects the balance between:

- short and long term objectives
- objective (quantitative) measures like financial, and subjective (qualitative) measures, e.g.,customer satisfaction
- leading indicators (desired outcomes and performance drivers) and lagging indicators (financial), and
- external (for shareholders and customers) and internal (for internal business processes, innovation, learning and growth),

This is similar to the objectives of the SAM model and also the SWOT model of (Hill & Jones, 2008). In figure 6 the four perspectives are shown with the cause and effect relationships. To understand how the cause and effect works in figure 6 it is necessary to start at the bottom of the figure and ask the question "to achieve my vision, how must my organisation learn and improve". A set of objectives, measures, targets and initiatives are then associated to this question. Then working your way up the model the next set of questions is posed. For example an answer to the first question(the cause) would be have people trained to improve our internal business processes (the effect) which is the next perspective working your upwards.

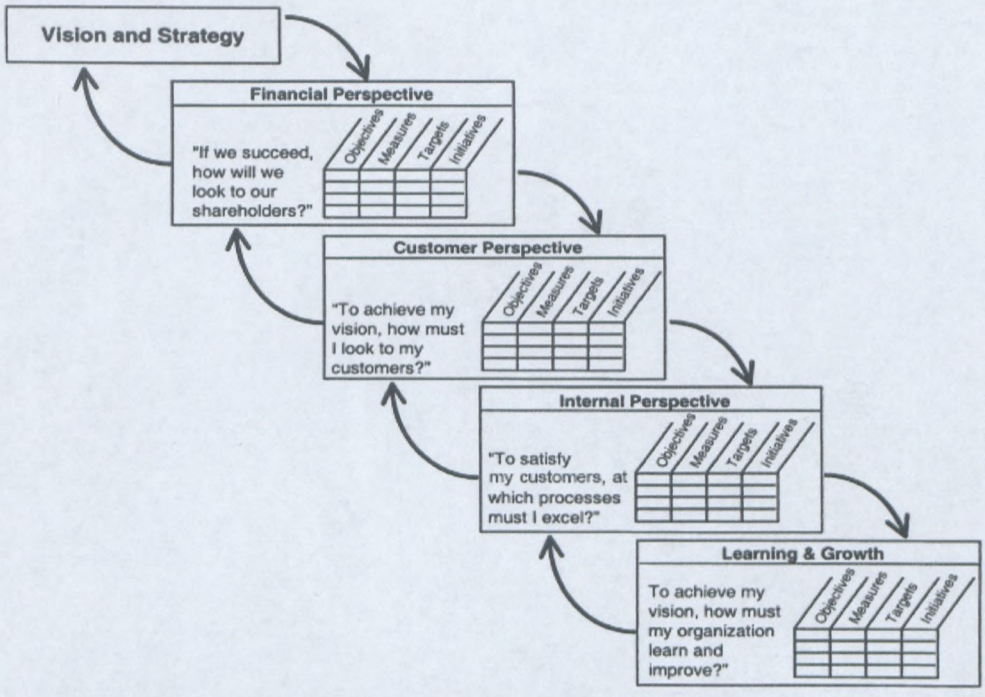


Figure 6 BSC showing cause and effect (Kaplan & Norton, 2001a)

When the BSC was first introduced it was about measurement and not about strategy. The BSC evolved from an improved measurement system to a core management system (Kaplan & Norton, 2001a). However, early adopters of the BSC achieved breakthrough results using this tool as a strategic management tool (Kaplan & Norton, 2001a) as apposed to a measurement system. Evolving from a measurement tool to a strategic management tool was indeed a paradigm shift from a short term measurement application to a long term view of a company. To discover how this was achieved Kaplan and Norton (2001a) researched how these companies achieved breakthrough results. Their research into strategic management revealed three concepts:

- strategy - they made strategy the pivot around which the organisational agenda was developed
- focus - focus on the strategy was the main driver
- organisation - employees were encouraged to act in different ways, guided by strategy

Five principles of productive organisations emerged from Kaplan and Norton (2001a) research on successful BSC users. These five principles describe the key components of building an organisation able to focus and align its strategy to deliver breakthrough results through strategy execution (Kaplan & Norton, 2001a).

These are:

1. **Mobilise transformation through executive leadership** - to drive change, executives must be the primary change agents. They need to develop a vision and strategy on how they want to guide the organisation. They must ensure that the entire executive team are aligned with the strategy of the organisation. Executive sponsorship is critical to ensure that transformational change is a success. Executives need to be involved in making strategy execution a core competency within the organisation. This can be done by:

- being actively involved in strategic planning and implementation
- visibly communicating the strategy through the communication channels used in the company
- appointing and encouraging transformation / change agents
- clearly articulating.the case for change
- ensuring the leadership team is engaged and not operating in silo's, and
- clearly defining and implementing the vision, mission and strategy.

2. Translate the strategy into operational terms – being able to translate strategy into operational terms has proved problematic. The BSC was developed to address this problem, to translate strategy into a language all can understand. The BSC provides a framework for describing and communicating the strategy in a consistent way. A strategic map is used to communicate the cause and effect relationship that shows how intangible assets (learning and growth, internal business processes and customer satisfaction) are converted into tangible (financial) outcomes. The BSC use of quantitative lead and lag measures allows the value-creating process to be described and measured and thus be managed rather than be inferred. Setting targets that are linked to well-defined and -understood objectives ensures that the measures are clearly understood by all. Targets can be used to stretch the organisation (to ensure effort from employees) and to ensure that efforts are focused on the correct set of measures.

3. Align the organisation to the strategy. The key objective of an organisation is to make the whole greater than the sum of the parts, thus creating synergy. Whether it is about sharing resources or sharing customers - creating new sources of value requires organisational alignment. These new sources of value, derived from organisational design and behaviour, are referred to as synergies. The key to creating organisational synergies is to ensure that the individual units are aligned around shared goals and objectives. To do this the organisation must clearly define its role, which helps define the synergies that it wishes to create at the lower levels. This provides a strategic architecture that guides organisational alignment by aligning corporate with support business units, ensuring support units are aligned with each other and with external partners, and finally that the board of directors are aligned. For every organisation the primary source of value is the customer. They make

judgements about the value of the organisation's products or services and can choose to utilise/not utilise their products/services.

4. Motivate to make strategy everyone's job. This is built around human resource management systems. It is the innovation and learning perspective of the BSC. These HR systems are used to shape the objectives, incentives, capabilities and competencies of every employee. Employees are required to understand the strategy of the organisation, if the strategy implementation is to be a success. How they conduct day-to-day business must ensure that it contributes to the strategy's success. Employees need to first understand the vision of the organisation and how the strategy is aligned with it. Without this knowledge, employees cannot adapt their work to contribute to effective strategy implementation. Communication is a major lever for organisational success. Good communication is needed to:

- instil an understanding of the organisation's strategy throughout the organisation
- foster buy-in to support the strategy
- educate the organisation about the measurement and management system for implementing the strategy, and
- provide feedback about the strategy

Communication and education and aligning incentives and personal objectives are critical to implementing strategy. Leading organisations are also developing personal scorecards to further enhance the personal development process to the strategic management process. Incentive compensation helps organisations move beyond creating strategic awareness to motivating people to behave strategically. It is important to thoroughly consider the design issues that can most influence performance, for example, the use of quantitative or qualitative measures tied to compensation decisions, whether to reward individual or team performance.

5. Govern to make strategy a continual process. Using the BSC as a strategic management system encompasses strategy formulation, strategic performance reporting, strategic reviews, strategic planning, budgeting and integration.

Kaplan and Norton (2004) showed how strategy maps provided a visual framework for integrating the organisation into the four perspectives of a BSC. Strategy maps illustrated the cause and effect relationships that link desired outcomes in financial and customer perspectives to critical internal processes. The strategy maps identify the specific capabilities in the organisation's intangible assets that are required for delivering performance in the critical internal processes (Kaplan & Norton, 2004). This is depicted in figure 7. The strategy map is read from the bottom up. For example the prerequisite for the fast ground turnaround internal business process would be to have the learning perspective of ground crew alignment and so forth as you move up the balanced scorecard perspectives of the strategy map.

Strategic Theme: Operating Efficiency	Objectives	Measurement	Target	Initiative
Financial Profitability Fewer planes More customers	• Profitability • More Customers • Fewer planes	• Market Value • Seat Revenue • Plane Lease Cost	• 30% CAGR • 20% CAGR • 5% CAGR	
Customer Flight Is on time Lowest prices	• Flight is on - time • Lowest prices	• FAA On Time Arrival Rating • Customer Ranking (Market Survey)	• #1 • #1	• Quality management • Customer loyalty program
Internal Fast ground turnaround	• Fast ground turnaround	• On Ground Time • On-Time Departure	• 30 Minutes • 90%	• Cycle time optimization
Learning Ground crew alignment	• Ground crew alignment	• % Ground crew trained • % Ground crew stockholders	• yr. 1 70% yr. 3 90% yr. 5 100%	• ESOP • Ground crew training

Figure 7 Strategy map depicting cause and effect method (Kaplan & Norton, 2004)

Intangible assets have become decisive for sustainable value creation. The learning and growth perspective of the BSC highlights the role for aligning the organisation's intangible assets to its strategy. This perspective contains the objectives for three components (human capital, information capital and organisation capital) of intangible assets essential for implementing strategy (Kaplan & Norton, 2004). These must be aligned and integrated with the objectives of the internal processes.

Strategic fit exists when the network of internal performance drivers (internal business processes, innovation and learning perspectives) is consistent and aligned with the desired customer and financial outcomes (the cause and effect of strategy maps).

Kaplan and Norton (2006) looked at aligning organisational units by introducing the role for an Enterprise Strategy Map and BSC. These tools are used to clarify corporate priorities, which can then be clearly communicated to each business unit, and to the board of directors, key customers, suppliers and alliance partners. The corporate headquarters evaluates how each business unit is performing as regards the priorities set by the corporate headquarters. In this way executives are provided with a governance framework that helps to unlock previously unrealised value from enterprise synergies (Kaplan & Norton, 2006).

The alignment process for aligning organisational units of necessity, should be cyclic and have a top down bias (Kaplan & Norton, 2006).The alignment sequence recommended by Kaplan and Norton (2006) to create enterprise-derived value starts with corporate headquarters articulating the enterprise value proposition that will create synergies among

operating units, support units and external partners. In this scenario IT is taken as an internal support and service unit. By utilising the strategy maps and BSC for the alignment sequence, this sequence allows the process to transform IT from an cost centre to a strategic partner (Kaplan & Norton, 2006). IT alignment is then viewed as a management process. Most organisations attempt to create synergy in a fragmented unco-ordinated way and when no one is responsible for overall organisation alignment, the opportunity to create value through synergy may be missed (Kaplan & Norton, 2006).

In aligning IT with the corporate organisation, the IT must be competent at delivering basic necessary services while developing the capabilities to collaborate with business units, offering them customised services, solutions and technologies that advance their strategies. This strategic positioning shifts the paradigm from how much to spend on IT to how much to invest in IT to advance the organisation's strategic agenda (Kaplan & Norton, 2006).

2.4.5.1 Alternative performance management tools

Activity-based costing (ABC) bridges finance and operations. On the operational level, it identifies the activities that are required by a company to deliver the goods or the services that it produces. It also defines which resources are needed to fuel these activities. On the financial level, activity-based costing provides managers with insight about the costs of business activities or processes by allocating direct and indirect costs to various steps for each activity or process, the cost drivers (Buytendijk (2008).

Activity-based management (ABM) aligns activities, resources, and financial results (Buytendijk (2008).

Buytendijk (2008) describes **Six Sigma** as a rigorous and disciplined methodology that utilises data and statistical analysis to measure and improve a company's operational performance, practices and systems.

The **European Foundation for Quality Management (EFQM)** Excellence Model is a strategic performance management methodology. It is a framework based on nine criteria. Four of these criteria are outcomes, with respect to one's own performance, customers, people and society. These are achieved by managing the five enabling criteria: leadership, strategy, partnerships and resources, people and processes. The EFQM process largely consists of self-assessment. According to EFQM, self-assessment is a inclusive, systematic and regular review of an organisation's activities and results referenced against the EFQM Excellence Model (Buytendijk (2008)

All these systems may be used for alignment between business and IT strategies.

2.4.5.2 Variance models: antecedents

In the literature about alignment, alignment is seen as either a single event or as a process which evolves over time and is thus continuously adapting and changing (Chan & Reich, 2007b).The following section deals with factor models (events), highlighting precursors or drivers of alignment, and following that the results that can be anticipated when alignment is achieved.

2.4.5.3 Antecedents to alignment

Background antecedents (precursors to alignment) are corporate culture, shared domain of knowledge and prior experience with IT (Chan & Reich, 2007b). Similarly, foreground antecedents (the visible behaviours that influence alignment) include leadership approach, planning processes, skills, competence and communication styles (Chan & Reich, 2007b).

2.4.5.4 Background antecedents

Reich and Benbasat (2000) established that two background antecedents - shared domain knowledge and IT implementation achievement - contributed to behaviours such as communication between IT and business executives and relationships between IT and business planning. From their research they established that four factors were antecedents to short-term alignment but only shared domain knowledge was an antecedent to long-term alignment (Reich & Benbasat, 2000). In addition, the occurrence of clear business plans, which would also be an antecedent, contributed to both short-term and long-term alignment.

2.4.5.5 Foreground antecedents/behaviours

Reich and Benbasat (1996) found that if leadership did not share common knowledge, that is, speak the same language, then leadership would be abdicated. One of the more important characteristics of leadership is to speak the language of change.

Mobilising change through executive leadership was proposed by (Kaplan & Norton, 1996). Change being proposed and implemented from an executive level stands a greater chance of success. Therefore an executive sponsor is essential for the successful implementation of alignment. This is the number one enabler of alignment between business strategy and IT strategy (Luftman & Brier, 1999).

The connections between business and IT planning (Reich and Benbasat (1996) were only found to influence the alignment in the short term. To achieve and sustain business and IT alignment, Luftman and Brier (1999) found that the enablers were senior managers' support for IT, IT leadership, IT understands the business, and partnership between business and IT.

Teo and Ang (1999) stated that there were few studies on the critical success factors for aligning business plans with IT plans. They found that the commitment of top management to IT to be the most important critical success factor. The critical success factors are shown in table 11 by the degree importance from their research. Most of these findings can be compared with components of the SAMM for example communication, commitment, understanding, partnership and knowledge.

Table 11 Critical success factors in the alignment of IS plans with business plans (Teo & Ang, 1999)

1. Top management is committed to the strategic use of IT.
2. Information systems (IS) management understands the business.
3. Top management has confidence in the IS department.
4. The IS department provides efficient and reliable services to user departments.
5. There is frequent communication between user and IS departments.
6. The IS strategies are able to keep up with advances in IT.
7. Business and IS management work together in partnership in prioritising applications development.
8. Business goals and objectives are made known to IS management.
9. The IS department is responsive to user needs.
10. Top management is knowledgeable about IT.
11. The IS department often comes up with creative ideas on how to use IT strategically.
12. The corporate business plan is made available to IS management.

Research by Luftman (2001) revealed that integrating the IT strategic planning process with the strategic business process allowed the organisation to achieve a higher SAMM level.

Communication was identified by (Reich & Benbasat, 2000;Slegianowski & Luftman,2005) to be a key antecedent to alignment. Sledgianowski and Luftman (2005) stated that communication should be pervasive and a repeatable task of all managers and employees. They advocated that this communication be informal - email, video-conferencing and face-to-face communication. Communication is a key perspective of the SAMM model.

2.4.5.6 Summary

This section introduced a literature review of the three theoretical models used in this research. Next, a literature review is carried out on the problems with aligning business and IT strategies.

2.5 PROBLEMS WITH ALIGNING BUSINESS AND IT STRATEGIES

2.5.1 The shortcomings of alignment in general

Research carried out in information systems was predominantly positivist and of an objective nature (Orlikowski & Baroudi, 1991). Ciborra (1997) was critical of alignment literature stating that it was too theoretical to be practical in the real world where human are actors. Furthermore, Ciborra (1997) said that the everyday life of managers comprises of frustration, accomplishments, gossips, confusion, bricolage, joy and desperation. These real life experiences were far removed from the sterile theoretical environment of literature research on alignment. A more practical understanding of strategies was that of care, hospitality and cultivation by managers, and was recommended by Ciborra (1997) as opposed to strategic alignment as proposed by theoreticians.

Chan and Reich (2007b) identified why alignment was not always desirable in the following themes:

- alignment research was mechanistic and failed to capture reality
- alignment was impossible if the business strategy was not known or in process
- alignment was not suitable as an end in itself since the business must always change
- IT should often challenge the business, not merely follow it

Since the most cited alignment paper by Henderson and Venkatraman (1993) was published, Leonard (2008) asserted that the world of alignment had radically transformed. Leonard (2008) stated that the current organisational contexts are:

- **blurring of boundaries between IS and the business function**

According to Leonard (2008) the SAM model does not address the blurring of boundaries between the domains. The SAMM model depends on an organisational view which may not always be beneficial in aligning business and IT strategies.

- **unpredictability regarding the consequences of technology-led change**

The SAM model was deterministic and did not engage with unpredictability of technology-led change. Some of the factors of the SAMM model ware also deterministic, for example, governance, whilst communication can assist an organisation dealing with unpredictability of technology-led change. The punctuated equilibrium (Sabherwal *et al.* 2001) model allows for several types of change to be examined. The co-evolutionary model focuses on interactions in rapidly changing environments (Benbya & McKelvey, 2006).

- **strategising in situations of very rapid change.**

The SAM does not support discrete business strategy driving an IT strategy and vice versa as it is seen to be too deterministic (Leonard (2008). The SAMM model does not address this problem. The co-evolutionary model has the potential to address this problem if it is correctly defined and develops the concepts of business and IT strategy (Benbya & Mckelvey, 2006). The BSC would be a suitable tool as a strategic model if it is continually monitored and adapted to rapid change.

2.5.2 Problems in achieving alignment

Business managers are not always knowledgeable about IT and IT executives are not always involved in developing business strategies. To address this issue, Luftman and Brier (1999) suggest in their enablers for business and IT alignment that business executives support IT, that there is a partnership established between business and IT, and that IT understands the business. The other challenges identified by (Chan & Reich, 2007b) were:

- If the corporate strategy was not known then this would have an impact on aligning all to its corporate strategy.
- If the importance of alignment was not fully understood this would lead to lack of alignment.
- Lack of industry and business knowledge does not engender the organisation with the capability to compete competitively.
- Alignment challenges related to locus of control and the status of IT would be a problem if the strategic role of IT was not recognised.
- If change management culture was not inculcated in the organisation, this would prove a challenge in adopting new alignment processes.

To overcome these issues, the three models used in this research for ensuring alignment are used to address the problem.

2.5.3 Criticism of the BSC

Reilly and Reilly (2000) discuss and criticise the balance scorecard approach. The primary limitation is that it does not define appropriate balance, particularly in terms of stakeholder value, and that the relationships among measurements and between perspectives are not explicit (Reilly & Reilly, 2000).

Norreklit (2003) investigated if the BSC is based on convincing theory or if it is the result of persuasive rhetoric. Norreklit (2003) comes to the conclusion that the BSC text is a persuasive trait that can be ascribed to the status of the authors. According to Norreklit (2003)

the dramatic approach used in the BSC relies too much on emotional appeal (pathos - appeal to the recipient's emotions and mood) and the reputation/authority of Kaplan and Harvard Business Publishing, ethos - trust is garnered by the recipients by the authority and credibility of the author, rather than on sound logical development and logos - the logical arguments gained through human reasoning.

Ittner and Larcker (2003) state that most companies have apparently adopted the BSC, but seldom establish the cause and effect relationships between the measurements and desired outcomes to be obtained between the non-financial measures. This allows manipulative managers to choose and manipulate measurements to enhance their own agenda. It appears that non-financial measurements, if not monitored correctly, are just as prone to manipulation as financial accounting measurements, and perhaps even more damaging to the companies because of the opportunity costs incurred (Ittner & Larcker, 2003).

According to Schonberger (2008) goal setting and scorecard approaches interact with process improvement in the following ways: most goals and targets are too highly hedged to indicate how to respond when the goal and targets are not attained, those setting the goals and targets are not the ones who have to implement the processes, key performance indicator (KPI) management tends to cause overreaction to variations that are normal to the system, most KPIs are influenced by factors that are beyond the control of the workforce and by focusing on management-set goals and metrics there is a reduction on the focus of the processes and process data needed for continuous improvement.

2.6 SUMMARY

The way that the three models are used in the study is shown below in the diagram. The model depicts the strategic alignment perspective, the maturity of the alignment perspective and results of the intervention. The SAM will be used to identify the type of strategic alignment perspective PRASA currently has. The SAMM will be used to identify the strategic alignment maturity level between business and IT at PRASA. These two models will provide input into the third model the development of the BSC to measure alignment between business and IT strategies at PRASA.

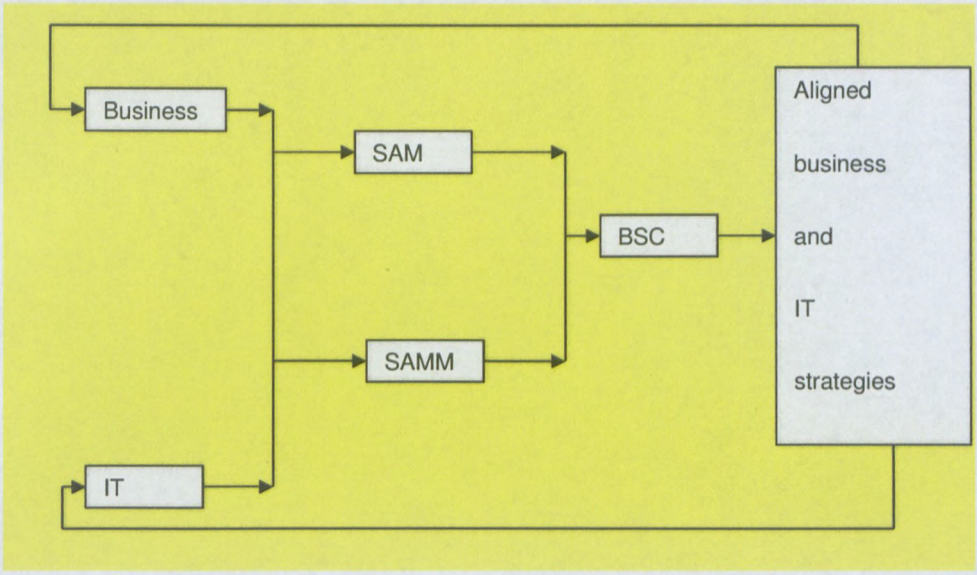
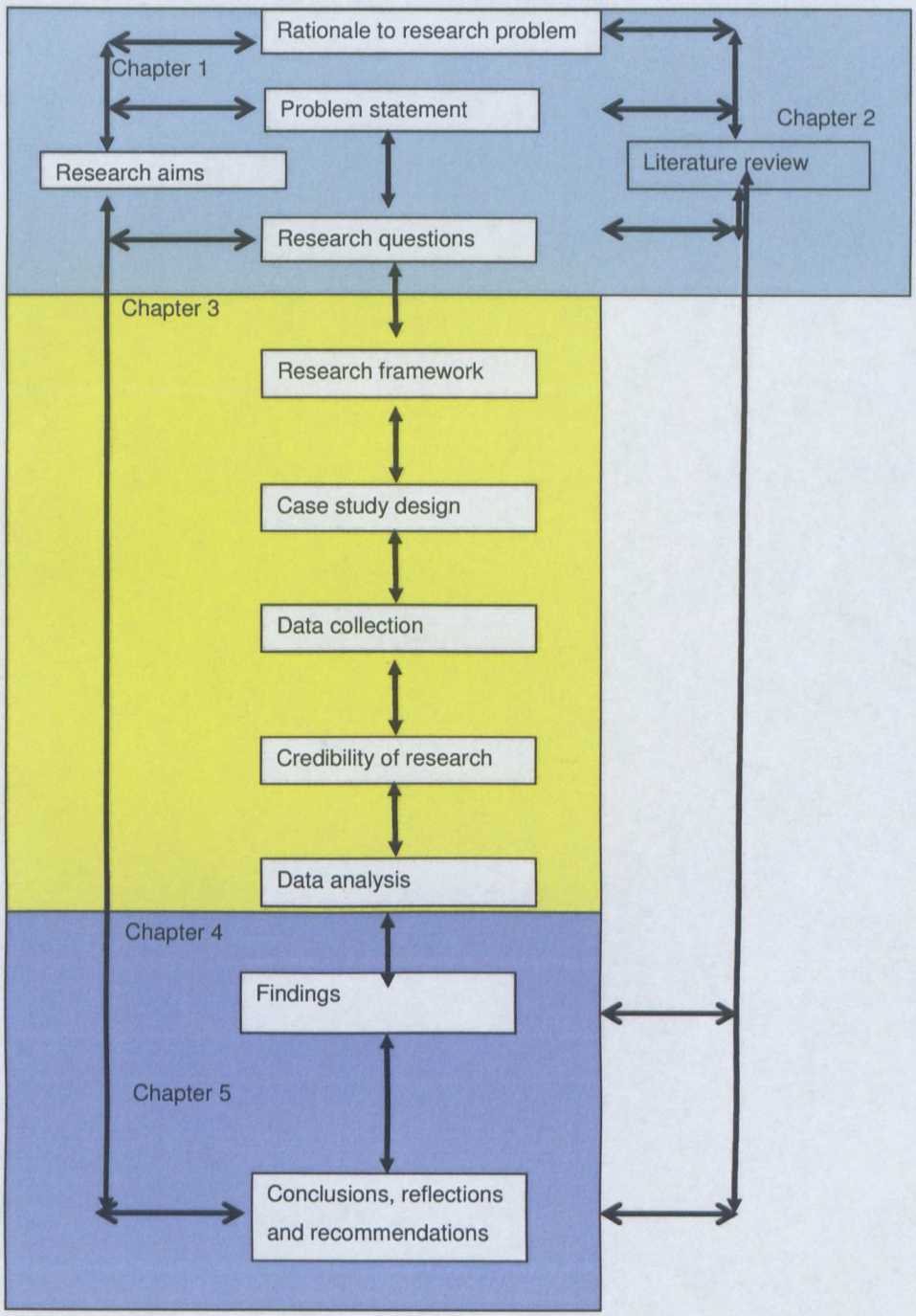


Diagram 4 Conceptual model of business and IT strategic alignment

The various perspectives of alignment from literature research were first introduced. The three models to be used in this research are then explained in detail. The problems with aligning business and IT strategies were then researched. The next chapter introduces the research design and methodology used for this research.

3 CHAPTER 3 RESEARCH DESIGN AND METHODOLOGY



3.1 INTRODUCTION

Burrell and Morgan (1979) state that all theories of organisations are based upon a philosophy of science and a theory of society. Furthermore, that social scientists approach their subject via explicit or implicit assumptions about the nature of the social world and the way it may be investigated. They identified four assumptions for conceptualising social science, namely:

- **Ontology** – concerns the very essence of the phenomena under investigation, whether reality is external (subjective) or whether reality is objective
- **Epistemology** – deals with assumptions about the grounds of knowledge, about how one might begin to understand the world and communicate this as knowledge to fellow human beings
- **Human nature** – the relationship between human beings and their environment, the two extremes are determinism and volunteerism
- **Methodology** – depending on the view of the first three assumptions, it will dictate which methodology to adopt (can be nomothetic or ideographic)

The four assumptions are depicted in table12.

Table 12 Four assumptions for conceptualising social science (Burrell & Morgan, 1979)

Subjective approach	Assumptions	Objective approach
nominalism	**ontology**	realism
anti-positivism	**epistemology**	positivism
volunteerism	**human nature**	determinism
ideographic	**methodology**	nomothetic

Burrell and Morgan (1979) also identified two dimensions of analysis - one for the study of nature of science, which they called the subjective-objective dimension, and another, the assumptions of the nature of society in terms of a regulation-radical change dimension. Added to these assumptions they define four distinct sociological paradigms. The two dimensions and four paradigms are depicted in figure 8.

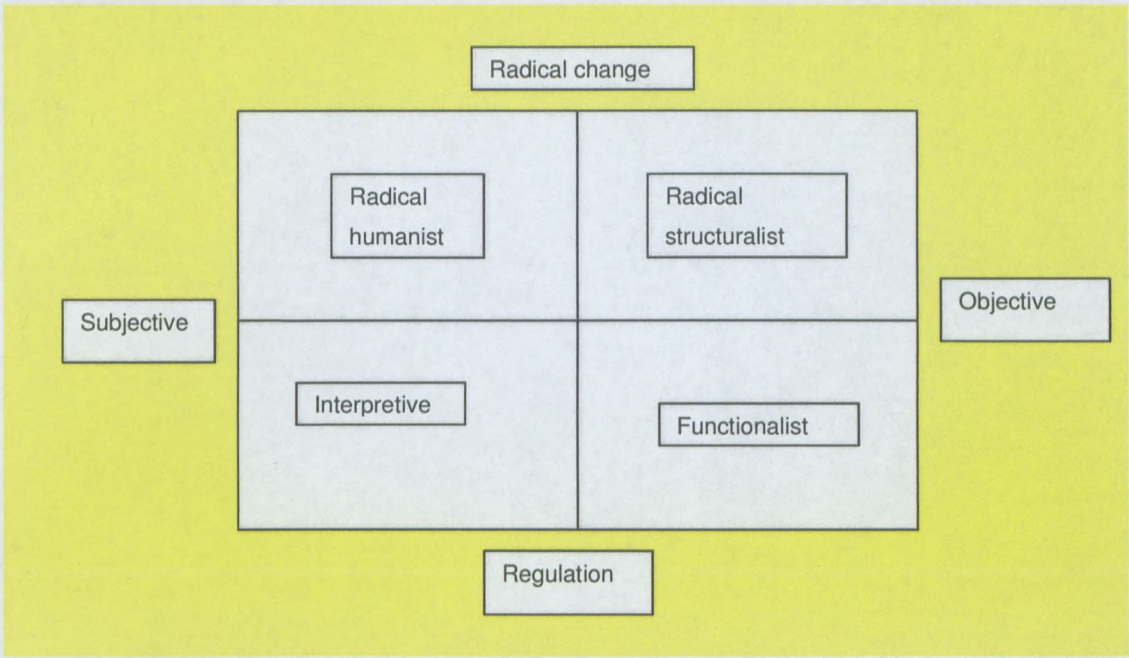


Figure 8 The two dimensions and four paradigms (Burell & Morgan, 1979)

The dimensions and paradigms will be used to understand the research questions. For this research the paradigm was interpretive, the research approach was inductive, the research strategy used a case study approach, the time horizon was cross-sectional and the dimension was subjective. This is presented as the quadrant bottom left in Figure 8. These terms are now explained in the following sections.

3.2 THE RESEARCH FRAMEWORK

A summarised research framework is depicted in table 13 below.

Table 13 Research framework for interpretive case study (Burrell & Morgan, 1979)

Subjective approach	**Assumptions**
nominalism	ontology, the way we perceive reality
anti-positivism	epistemology, how we understand the world
volunteerism	human nature
ideographic	methodology

The terms are now expanded upon.

3.2.1 The interpretive paradigm

The interpretive paradigm as described by Burrell and Morgan (1979) is the sociology of regulation, whose subjective approach makes it implicit rather than explicit. According to Burrell and Morgan (1979) in its approach to social science, the interpretive paradigm tends to be nominalist, anti-positivist, voluntarist and ideographic, the direct opposite to the positivist approach which was previously the preferred approach to research in information systems. The interpretive paradigm, as opposed to the other three sociological paradigms (see figure 8), is informed by a concern to understand the world as it is, to understand the fundamental nature of the social world at the level of subjective experience. It seeks to explain how individuals are intimately part of the subjective experience, as opposed to the observer of action - the objective experience (Kuada, 2009).

The interpretive paradigm asserts that our ontological, as well as our epistemological stance, are social products and hence incapable of being understood independently of the social actors that construct and make sense of that reality (Orlikowski & Baroudi, 1991). The researcher is included as a social actor. Yanow and Schwartz-Shea (2010) distinguish between qualitative research and interpretive research terminology giving three reasons:, methodological explanation, pragmatic reason and linguistic reason.

3.2.2 Ontology - the nature of reality

Ontology is concerned with the nature of reality. The ontology of the interpretive perspective emphasises the importance of subjective meanings and social-political, as well as symbolic action in the processes through which humans construct and reconstruct their reality (Burrell & Morgan, 1979). Therefore, ontologically the interpretive paradigm attempts to understand how and why individuals, through their socialisation into, interaction with, and participation in a social world, give it a certain meaning (Orlikowski & Baroudi, 1991). Meaning and intentional descriptions are important not merely because they reveal subjects' states of mind which can be correlated with external behaviour, but because they are constitutive of those behaviours. These meanings may shift over time. The ontological approach for an interpretive researcher (Walsham (1995) would involve either one of internal realism, which views reality as an subjective construction of the shared human meaning, or subjective idealism, where each person constructs his or her own reality. Klein and Myers (1999) state that the social construction in the interpretive field of research is obtained by language, consciousness, shared meanings, documents, tools and other artefacts. Goles and Hirschheim (2000) found that different languages and cultures perceived and structured reality differently. For example, how socially transmitted concepts and names are perceived. Becker and Niehaves (2007) differentiate between ontological realism (positivist approach) and ontological idealism in which reality is perceived as a construct dependent on human consciousness. In this scenario

reality is independent of the "real world". This approach was used to describe the object of cognition from an ontological perspective (Becker & Niehaves, 2007).

3.2.3 Epistemology - the nature of knowledge

Epistemology is concerned with the nature of knowledge. The interpretive position asserts that the language humans use to describe social practices, constitutes those practices. Thus, understanding social reality requires understanding how practices and meanings are formed and informed by the language and tacit norms shared by humans working towards some common goal. Furthermore, Orlikowski and Baroudi (1991) state that the interpretive perspective cannot accommodate positivistic beliefs. Interpretive research is seen by them to be based on essentially different philosophical assumptions to those of the positivist perspective and seeks to replace the positivist approach. In this extreme view, research with a subjective lens cannot be carried out when researching from a natural science perspective (Orlikowski & Baroudi, 1991). In choosing a research approach, the researcher is in fact choosing which aspects of a phenomenon to focus on (Orlikowski & Baroudi, 1991).

Epistemologically, Walsham (1995) says that the following approaches can be used for interpretive research, non-positivism where facts and values are interlinked and difficult to decouple, and normativism which views scientific knowledge which only deals with facts as being ideological and conducive to meet social ends.

Klein and Myers (1999) state the interpretive approach is not a synonym for qualitative research as the qualitative approach might also adopt a positivist stance. Yanow and Schwartz-Shea (2010) distinguish between qualitative research and interpretive research terminology giving three reasons: methodological explanation, pragmatic reason and linguistic reason.

3.2.4 Results of research into the usage of interpretive research

Research carried out in information systems was mostly positivist and of an objective nature (Burell & Morgan, 1979). The results of their study of US MIS mainstream journals found that 96.8% of studies used the positivist approach as opposed to 3.2% for the interpretive approach. The reasons for this disproportionate use of the positivist approach given by Goles and Hirschheim (2000) was the social milieu in which the field is based, the field's search for respectability, difficulties in boundary setting, the social constructions which govern academic careers and perceived lack of palatable alternatives. They advocate that the pragmatic pluralism approach be used as this leads to a broader variety approach to research. Furthermore, this releases the constraints of enquiry from only one dominant domain to embrace the intrinsic diversity of problem formulation faced by researchers.

Walsham (1995) found an improvement in interpretive research, especially interpretive case studies, but admits that the volume and range was still relatively limited. Chen and Hirschheim (2004) concurred with this assumption. They examined 1893 articles from 1991 to 2001 published in eight major US research journals and recorded that 81% still used positivist research and that the amount of interpretive research was inconsequential at 19%. Myers and Liu (2009) extended this study for the period 1998 to 2007. They studied four US journals and two European journals over this period. Their results reflected an improvement in the use of interpretive research to 23% to the 76% for positivist research. Myers and Liu (2009) present their statistical findings but do not provide reasons for the paradigmatic and methodological use of research methods. As can be seen from the above, there is a slow but definite move to using interpretive research in the IT environment. It would be interesting to know what the uptake in South Africa is for this type of research.

3.2.5 Subjective - nature of science

Burrell and Morgan (1979) state that it is possible to identify and communicate the nature of knowledge as being hard, real and capable of being transmitted in tangible form, or as softer, more subjective, based on experience and insight of a unique and essentially personal nature. The epistemological assumptions in these instances, according to Burrell and Morgan (1979), determine extreme positions on the issue of subjective-objective assumptions, these being whether knowledge is something which can be acquired on the one hand (objective), or something which has to be personally experienced on the other, the subjective assumption.

Ontological beliefs, according to Orlikowski and Baroudi (1991), have to do with the essence of phenomena under investigation. They draw a clear distinction between the two opposing nature of science assumptions: objective, which is independent of human interaction, and subjective, which means having existence only through the action of humans in creating and recreating the phenomena.

3.2.6 Regulation - nature of society

Regulation, according to Kuada (2009), is a sociology which is concerned with the need for regulation in human affairs as opposed to the other dimension, radical change. Sociology of regulation is concerned with status quo, social order, consensus, social integration and cohesion, solidarity.

3.2.7 Research strategies - the case study

The research strategy is the general plan for answering the research questions It must be appropriate to the research question and its objectives.

Research strategies identified by Saunders *et al.* (2009) are experiment, survey, grounded theory, ethnography, action research, cross-sectional and longitudinal studies, descriptive and explanatory studies and finally case study. As stated previously, this research follows the anti-positivist and interpretive approach and is supplemented by the case study research strategy which is now discussed.

3.2.8 Case study

Case study is defined by Tellis (1997b) as a triangulated research strategy. The need for triangulation arises from the ethical need to confirm the validity of the processes (Yin (1984). In case studies, this is carried out by using multiple sources of data (Yin (2009). The reason given for using multiple sources of data is the triangulation of evidence, which increases the reliability of the data and serves to corroborate the data gathered from other sources (Tellis (1997a). Yin (2009) identified six primary sources of evidence for case study research; these are documentation, archival records, interviews, direct observation, participant observation and physical artefacts.

The interpretive paradigm was complimented by case study research which was defined by Robson (2002) as "a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within real life context using multiple sources of evidence". Yin (2009) adds to the definition by stating that the case study is an empirical enquiry that exists when "the boundaries between phenomenon and context are not clearly evident".

3.3 CASE STUDY DESIGN

According to Yin (2009) a case study design should be considered when:

- the focus of the study is to answer "how" and "why" questions,
- the behaviour of those involved in the study cannot be manipulated,
- you want to cover contextual conditions because you believe they are relevant to the phenomenon under study, and
- the boundaries are not clear between the phenomenon and context.

Yin (2009) recommends five components of research design. These are described in table14 below with the addition of binding the case.

Table 14 Research design adapted from (Baxter & Jack, 2008)

Research design	Description
Research questions	How can PRASA manage strategic alignment between business and IT?
It's propositions	PRASA has dysfunctional and fragmented institutional arrangements resulting in misalignment between business and IT.
Unit of analysis	The unit for analysis most appropriate for the research is guided by the research question (Benbasat *et al.* 1987). Baxter and Jack (2008) refer to the unit of analysis as a case stating that one needs to ask "what is it that needs to be analysed". In this research the unit of analysis/case is "factors affecting the alignment of business and IT strategies".
The logic linking the data to the propositions	By asking semi-structured questions related to strategic alignment, strategic maturity and performance measurement, can the data realised be linked logically to the proposition posed?
The criteria for interpreting the findings	The paradigm will be interpretive, the research strategy will use a case study approach, the research approach will be inductive, the time horizon will be cross-sectional and the dimension will be subjective.
Binding the case	In order to control exactly what is going to be researched and what is going to be excluded, boundaries must be placed on the case (Yin (2003). Binding the case can be done by - time and place - time and activity - definition and context (Baxter & Jack,2008)

3.3.1 Types of case study

Different research methodologies are used to address the specific study purpose, and different case study types are used to answer the specific type of question posed. Various authors as summarised in table 15, have identified different types of case studies to address different approaches to answer the research questions.

Table 15 A summary of the types of case studies

Type	Definition	Source
exploratory	Finding out what is happening, seeking new insights and generating ideas and hypotheses for new research	Runeson and Höst (2009)
descriptive	Portraying a situation or phenomenon	Runeson and Höst (2009)
explanatory	Seeking an explanation of a situation or a problem, mostly but not necessary in the form of a causal relationship	Runeson and Höst (2009)
improving	Trying to improve a certain aspect of the studied phenomenon	Runeson and Höst (2009)
intrinsic	Stake (1995) uses the term intrinsic and suggests that researchers who have a genuine interest in the case should use this approach when the intent is to better understand the case. It is not undertaken primarily because the case represents other cases or because it illustrates a particular trait or problem, but because in all its particularity and ordinariness, the case itself is of interest.	Baxter and Jack (2008)
instrumental	Used to accomplish something other than understanding a particular situation, it provides insight into an issue or helps to refine a theory. The case is of secondary interest; it plays a supportive role, facilitating our understanding of something else.	Baxter and Jack (2008)
collective	Collective case studies are similar in nature and descriptive to multiple case studies (Yin, 2003).	Baxter and Jack (2008)
positivist	There is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from a representative sample to a stated population.	Klein and Myers (1999)

interpretive	It is assumed that our knowledge of reality is gained only through social constructions such as language, consciousness, shared meanings, documents, tools and other artefacts.	Klein and Myers (1999)
critical	The main task is seen as being one of social critique, whereby the restrictive and alienating conditions of the status quo are brought to light.	Klein and Myers (1999)

3.3.2 Selecting the case study design

The two types of case study designs are the multi-case study and the single case study. To answer the research question "How can management at PRASA improve business and IT strategic alignment?" a single case study was used. Although a single case may not provide sufficient evidence to make robust generalisations, it can establish the existence of a phenomenon (Van Maanen (1988). Kelliher (2005) stated that whilst interpretive research is criticised in terms of validity, reliability and generalisability - which she refers to as research legitimisation - these research legitimisations are amplified in single case scenarios. Yin (2009) stated that single case design is justifiable under the following circumstances; a critical test of existing theory, a rare or unique circumstance, revelatory or longitudinal purpose. Generalising a single case study means the case can be repeated given similar circumstances. Validity and reliability are dealt with in the next section. The quality of research designs is shown in table 16. The table depicts how the quality of research design is achieved. It shows the test to be carried out together with the definition of the test. It then shows which tactics are employed for each test and where the tactic occurs.

Table 16 Quality of research design (Yin (2009)

Test	**Definition**	**Case study tactic**	**Where tactic occurs**
Construct validity	Establishing correct operational measures for the concepts studied	Use multiple sources of evidence Establish chain of evidence Have key informants review draft case study report	Data collection Data collection composition
Internal validity	Establishing a causal relationship, whereby certain conditions are shown to lead to	Do pattern matching Do explanation	Data analysis

	other conditions as distinguished from spurious relationships	building Address rival explanations Use logic models	Data analysis Data analysis Data analysis
External validity	Establishing the domain to which a study's findings can be generalised	Use theory in single case studies Use replication logic in multiple case studies	Research design Research design
Reliability	Demonstrating that the operations can be repeated with the same results	Use case study protocol Develop case study database	Data collection Data collection

These quality approaches was used in this research to answer the research questions.

3.3.3 Ethical considerations

Key ethical factors include:

- Information consent – a written request will be made to PRASA to carry out a case study of the organisation.
- Review board approval – the research proposal has been approved by Cape Peninsula University of Technology as appropriate for research.
- Confidentiality – this is assured in the letter of consent and also before any interview is carried out.
- Handling of sensitive results – confidentiality of results of the research will be sought from Cape Peninsula University of Technology, the institution moderating the research.
- Inducements – the research will become the property of PRASA.
- Feedback – a presentation of the results will be given to PRASA which will include recommendations. The participants of the study will also be given a copy of the final research.

The letters requesting access to PRASA as well as the approval letter are included in appendix 1. The reason for this request is because some of the documentation was of a confidential nature for example the company's business plan.

3.3.4 Research approaches - deductive or inductive

The research project will involve the use of theory. There are two approaches:

Deductive – in this approach a theory and hypothesis are developed and the researcher designs a research strategy to test the hypothesis. Robson (2002) lists five sequential stages through which the deductive research will progress:

- deducing a hypothesis (the testing of the relationship between two or more concepts) from theory
- expressing the hypothesis in operational terms
- testing the operational hypotheses
- examining the specific outcome of the enquiry
- if required, modify the theory in the light of the findings

Saunders *et al.* (2009) stated that deductive approaches allowed the researcher to be independent of what was being observed. This deductive research would entail a subjective approach. Quantitative measures can be incorporated when the concepts are operationalised (Saunders *et al.* 2009). The deductive research lends itself to the functionalist paradigm as observed in table 8.

Inductive – this approach allows for theories to be developed from the analysis of the collected data. Saunders *et al.* (2009) identified major differences between deductive and inductive approaches. These are shown in table17 below.

Table 17 Differences between deductive and inductive emphasis (Saunders *et al.* 2009)

Deductive emphasis	**Inductive emphasis**
Scientific principles	Gaining an understanding of the meanings humans attach to events
Moving from theory to data	A close understanding of the research context
The need to explain causal relationships between variables	The collection of qualitative data
The collection of quantitative data	A more flexible structure to permit changes of research emphasis as research progresses
The application of controls to ensure validity of data	The realisation that the researcher is part of the research process
The operationalisation of concepts to ensure clarity of definition	Less concern with the need to generalise
A highly structured approach	

Researcher independence of what is being researched	
The necessity to select samples of sufficient size in order to generalise conclusions	

This research used the inductive approach and utilised the inductive emphasis shown in table17 above to answer the research question.

3.3.5 Time horizons

Time perspectives to research design are independent of which research strategy is being pursued. Two types are identified:

- cross-sectional, or snapshot – is often employed in survey strategy as it is a study of a particular phenomenon at a particular time. They may also be used for interpretive case studies as the interviews are conducted over a short period of time.
- longitudinal – in this case the time horizon is extended.

For this research a cross-sectional semi-structured interview was carried out to answer the research question.

3.4 DATA COLLECTION METHODS

Specific data to be collected depends on the research question and the unit of analysis in order to obtain a rich set of data and to capture the contextual complexity of the research (Benbasat *et al.* 1987).

Walsham (1995) argued that when using interpretive case study research, theory can be used as an initial guide to design and data collection, or as part of an iterative process of data collection and analysis and as the final product of research. He cautioned against using theory too rigidly as an initial guide as this could stifle new avenues for exploration. Instead, the researcher should be open minded and show a willingness to modify initial assumptions and theories when interrogating the field data. This forms part of the iterative process of data collection. The final products of case study research are concepts, a conceptual framework, propositions or mid-range theory (Walsham (1995). In interpretive research the researcher is directly involved in the process of data collection and analysis (Klein & Meyers, 1999). This research used the following sources of data collection: documentation, archival records and interviews were carried out within the organisation.

3.4.1 Sampling method

The non-probability sampling method was used for this research, which is purposive or judgemental sampling (Saunders *et al.* 2009). This sampling procedure entails the judgement of the researcher to select the cases that make up the sample - this can be done on the basis of extreme cases, heterogeneity, homogeneity, critical cases or typical cases (Saunders *et al.* 2009). Homogeneous sampling which focuses on one particular sub-group in which all sample members are similar will be utilised - this will enable in-depth study of the group (Saunders *et al.* 2009). The respondents for the interviews were IT managers and business managers from different departments within PRASA.

3.4.2 Secondary Data

Secondary data is data that has already been collected for some purpose. This data may be quantitative or qualitative.

Saunders *et al.* (2009) identified three types of secondary data:

- **Documentary secondary data** – PRASA uses a document management system to store its documents. It also produces an annual report. These documents were used to corroborate the primary data collected. For example, the business plan was used as a secondary source of data to corroborate the primary data obtained from the unstructured interviews.
- **Survey-based secondary data** – is data collected by questionnaires that have already been analised for their original purpose. For example, PRASA annually conducts a customer satisfaction survey. They have also carried out an employee satisfaction survey. These secondary data surveys were used when triangulating evidence from different sources.
- **Multiple-source secondary data** – this is a combination of documentary and survey secondary data and form a new data set. For example, combining the performance measures from the business plan with the customer satisfaction survey gave an overall indication of how well the company is performing.

The advantages and disadvantages of secondary data (Saunders *et al.* 2009) are shown in table18 below. The secondary data used in this research was the company business plan and the company's annual report.

Table 18 The advantages and disadvantages of secondary data (Saunders *et al.* 2009)

Advantages	Disadvantages
May have fewer resource requirements	May be collected for a purpose that does not match your need
Unobtrusive	Access may be difficult or costly
Longitudinal studies may be feasible	Aggregations and definitions may be unsuitable
Can provide comparative and contextual data	No real control over data quality
Can result in unforeseen discoveries	Initial purpose may affect how data is presented
Permanence of data	

3.4.3 Collecting primary data through observation

Two contrasting methods of observation are identified: structured observation or participant observation. Structured observation is quantitative in nature, whilst participant observation is qualitative in nature and involves interacting with the social phenomena (Saunders *et al.* 2009). As this research followed the interpretive case study approach it involved participant observation utilising an unstructured or in semi structured interviews to answer the research questions.

3.4.4 Interviews – the research instrument

The research instrument was an unstructured interview based on the research questions. The researcher avoided imposing external categories on a phenomenon and instead derived constructs from field studies by in-depth exposure to the phenomenon that had been studied (Orlikowski & Baroudi, 1991). The researcher is the primary research instrument (Trauth (2001).

3.5 THE CREDIBILITY OF THE RESEARCH FINDINGS

Two emphases on research design are

Reliability - Robson (2002) asserted that there are four threats to reliability:

> Subject or participant error – interviews carried out at different periods may generate different results. The researcher should choose a neutral time that is suitable for the interviewee. This was done by arranging a suitable time and a quiet office in which to carry out the interview without disturbance or distraction.

- Subject or participant bias – interviewees in this situation might be prepared to divulge sensitive information to the interviewer. However, they might be afraid to supply truthful observation for fear of recriminations. This can be overcome by ensuring anonymity during the interviews. The interviewees were each give a copy of the letter requesting an interview. The researcher also assured then verbally when they came for the interview that their anonymity would be assured.
- Observer error - this can happen if there is more than one person conducting the interviews. This was mitigated against by having only one interviewer
- Observer bias – the tone, body language and behaviour of the interviewer may affect the interviewee's response, as well as the way the interviewer interprets the results. The researcher ensured that the behaviour was the same during each interview.

Because unstructured interviews are non-standardised, the findings are not necessarily intended to be repeatable as they are taken at a specific moment in time. Therefore an attempt to ensure that interpretive research could be replicated by other researchers would not be realistic or feasible without undermining the strength of this type of research (Saunders *et al.* 2009).

Validity – is concerned whether the findings are really what they appear to be. Robson (2002) identified the following threats to validity; history, testing, instrumentation, mortality, maturation, and ambiguity about causal direction. Validity in the interpretive context deals with the extent the researcher gains access to the participant's knowledge and experience, and is able to interpret meaning from the language and disposition of that participant during the unstructured interview.

3.6 DATA ANALYSIS

Yin (2009) describes techniques for data analysis as:

- pattern matching
- linking data to propositions
- explanation building
- time-series analysis
- logic models
- cross-case synthesis

Leedy and Ormrod (2005) asserted that the purpose of data analysis was to interpret and draw conclusions from the collected data. The first step would be to set clear analysis objectives (Leedy & Ormrod, 2005). These objectives serve to direct and guide the analysis process and involve the following steps: organisation of details about the case, categorisation of the data, interpretation of single instances, identification of patterns and synthesis, and

generalisations (Leedy & Ormrod, 2005). The data was analysed using a suitable theoretical lens and the findings will be interpreted to draw conclusions (Leedy & Ormrod, 2005).

First data is coded, which means that parts of the text can be given a code representing a certain theme, area, construct, etc. One code is usually assigned to many pieces of text, and one piece of text can be assigned more than one code. Codes can form a hierarchy of codes and sub-codes. The coded material can be combined with comments and reflections by the researcher, i.e., "memos" (Robson (2002). Codes can be used to identify phrases that are similar in different parts of the material, also patterns in the data, and differences between sub-groups of subjects, etc. In qualitative analysis there are major needs for innovative and analytical work in both phases. One example of a useful technique for analysis is tabulation, where the coded data is arranged in tables, which makes it possible to get an overview of the data. The data can, for example, be organised in a table where the rows represent codes of interest and the columns represent interview subjects (Runeson & Host, 2009).

3.6.1 Quality of data

This was ensured by utilising the principles of interpretive field studies, namely, the principle of: hermeneutic circle, contextualisation, interaction between the researchers and the subjects, abstraction and generalisation, dialogical reasoning, multiple interpretations and suspicion (Klein & Meyers, 1999).

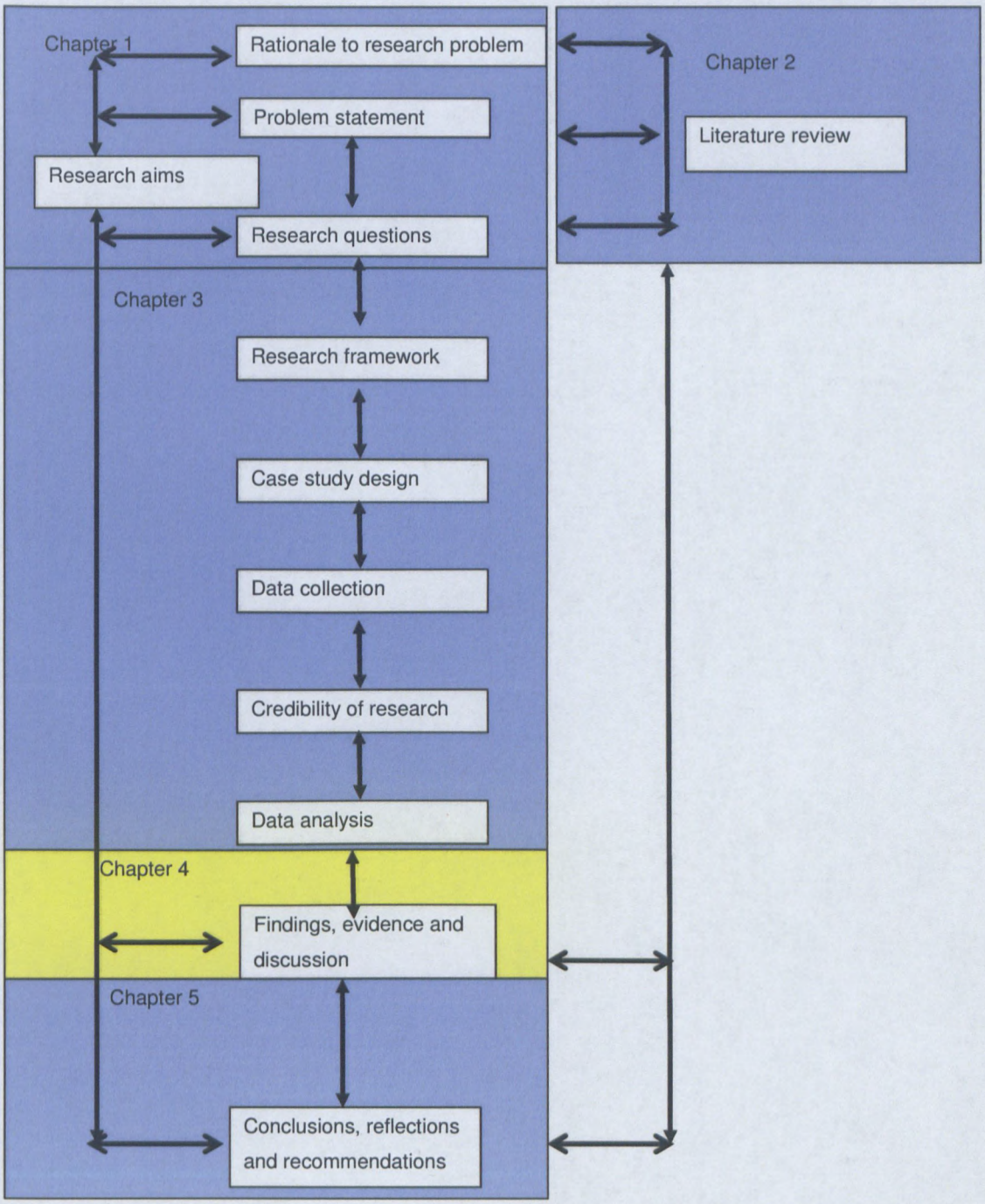
3.7 DELINEATION OF THE RESEARCH

The study explored to what extent alignment between business and IT strategies exists at PRASA. The population included IT managers and business managers from within the PRASA group.

3.7.1.1 Summary

A comprehensive research design and methodology was presented. The research framework was introduced, then the case study design, the data collection methods, the credibility of the research findings, the data analysis and finally the delineation of the research. The next chapter presents the analysing of the case, evidence and discussion.

4 CHAPTER 4 ANALYSING THE CASE, EVIDENCE AND DISCUSSION



4.1 INTRODUCTION

The aim of this chapter is to present the analyses of the responses to the research question ***"How can PRASA manage strategic alignment between business and IT?".*** In chapter three it was stated that an interpretive case study would be carried out. To corroborate the findings obtained from these semi-structured interviews (the primary data), the company's business plan for 2008/09 to 2010/11 together with the annual report for 2008/09 were used. The reason for using these two sources of secondary data was that in the business plan the performance measures in the form of the balanced scorecard were formulated. Furthermore the annual report produced the actual results obtained from the performance measures. This, in effect, gives the planned versus actual performance measurement results. The results published in the annual report are provided in appendices 2 and 4. The triangulation of data from these three sources will be used to reinforce or contradict the findings.

Chapter four presents the results obtained from analysis of data to answer the main research question and the five sub-questions. To answer the main question, five sub-questions were posed as presented below.

1. Why is the need for the alignment between business and IT strategies important for PRASA?

2. How can the Strategic Alignment Model (SAM) be utilised to understand the strategic alignment between business and IT at PRASA?

3. How can the six factors of the Strategic Alignment Maturity Model (SAMM) be used to strategically align the PRASA business and IT strategies?

4. How can the balanced scorecard be used to strategically align the PRASA business and IT strategies?

5. Why is strategic alignment between business and IT a problem for PRASA?

Firstly, the case company is described and then the respondents introduced. Each sub-question will then be dealt with and the responses from the three data sources will be analysed.

4.2 THE CASE COMPANY

Following the government's decision to consolidate passenger rail, the Legal Succession to the South Africa Transport Services (SATS) Act of 1989 was amended by parliament, and signed into law on 27 November 2008, to enable the implementation of this strategic decision. PRASA is a public passenger transport entity owned 100% by the government of South Africa from the consolidation of government-owned passenger rail entities, a road based passenger carrier and property asset management entities. The Passenger Rail Agency of South Africa ("PRASA" or the "Agency") has been established to house the operations, personnel and assets of the South African Rail Commuter Corporation (SARCC), Metrorail, the SARCC wholly owned subsidiary, Intersite Property Management Services (Pty) Ltd ("Intersite"), Shosholoza Meyl ("Shosholoza"), and Autopax, the long distance bus company. The long-term goal of PRASA is to be a commercially viable business capable of delivering efficient, high-quality transport services on a sustainable basis. The commercial viability of the business will be measured in terms of the growing ability of PRASA to meet its own operational funding requirements. In this context, only the capital subsidy could be expected from the government in the long-term, strictly for purposes of developing and maintenance of infrastructure. To this end, and as part of building a viable and sustainable business, PRASA implemented and is still implementing a mixture of strategies aimed at increasing patronage levels, recapitalising its property portfolio, maximising income from current and future leases, while rebalancing the fare structure to maximise income without compromising on government's social objectives.

The major reason for the formation of PRASA was that the institutional arrangements that governed passenger rail and the entire public transport system over the years did not promote efficiency, innovation and accountability. There was also a great deal of confusion between the contractor and regulatory functions implicitly embodied in the SARCC. It was essential to overcome the fragmented and dysfunctional institutional arrangements that existed in the provision of passenger services. A key government consideration was the need to find sustainable funding solutions as part of its efforts to reverse the decline in commuter rail services. The National Rail Plan, which was approved by Cabinet in December 2006, identified the funding and investment requirements for passenger rail over the next 10 years.

One of distinct businesses of PRASA is Metrorail which delivers commuter rail services in urban metropolitan areas. The case for this research is PRASA Western Cape.

Transnet operated the commuter rail assets on behalf of the SARCC, by way of a business agreement through Metrorail - an operating unit of Spoornet until 1996 when Metrorail became, in its own right, a business unit of Transnet. The mutual use of these assets was governed, amongst others, by the Mutual Use and Mutual Hire Agreements between Transnet and the SARCC. Under this arrangement, the SARCC owned the commuter rail assets and

retained responsibility for capital expenditure and all asset maintenance with the exception of maintenance associated with operations, which became the responsibility of Metrorail. The lack of clarity on roles between the SARCC and Metrorail was the source of some of the problems that impacted negatively on the maintenance of the commuter asset base. Since November 2007, SARCC and Metrorail have been merged and report into the PRASA umbrella.

The commuter rail business of PRASA is structured to deliver on the primary mandate of provision of train service excellence in priority corridors, compliance to regulatory and operational safety requirements, as well as station and network operations. The key focus is on commuter rail operations and maintenance functions. The regions are divided into the Gauteng region, comprising Southern and Northern Gauteng, Durban, and Western and Eastern Cape. The service products comprise of Metro trains, Metro Plus trains and Business Express trains that have been introduced over the last year or two.

The focus of Metrorail is to provide high quality on-time rail commuter transport in urban areas with a total journey focus from any origin to destination. The service excellence programme in rail corridors has the intent to introduce service excellence as an operational strategy for Metrorail. This operational strategy focuses on delivery of minimum service levels of increased frequencies (5 minutes headways) during the peak, on-time performance, quality stations, integration with other feeder and distribution services, and personal security on the Metrorail corridors.

These are the objectives and aims of the company. The research will revealed whether these objectives and aims have been met. This will be done by comparing the business plan, which provides the plan, and the annual report, which provides what the actual outcome of the plan was. This will be triangulated with the results of the interview, the company's documents and records.

4.3 THE RESPONDENTS

The respondents were the business and IT managers at Cape Metrorail. Of the population of managers, eight were interviewed. Furthermore, the interviews were divided between four business managers and four IT managers

4.4 DATA ANALYSIS

The research carried out was an interpretive case study, and as a strategy a semi-structured interview followed with business and IT managers, using a guiding questionnaire. The first question addressed the importance of alignment between business and IT. Question two uses the SAM in an attempt to identify the current domain of strategic choice. Four perspectives of

strategic choice are provided by the SAM. Question three uses the SAMM to identify the perceived level of alignment maturity between business and IT. Six constructs are utilised in this question to gauge the level of maturity. Question four addresses how the BSC best practices are used to gauge how strategically focused the organisation is. There are five best practices which guide this question. Finally, question five attempts to identify from the respondents why alignment between business and IT is a problem. To answer this question the respondents were asked an open ended question. In all these questions the business plan and annual report were used to confirm or negate the responses from the respondents. The interview questions were closely linked to the research problem, questions and aim. The data analysis obtained from the responses was compared for congruence or deviation to derive an opinion on each question

4.5 SUB-QUESTION 1: WHY IS ALIGNMENT BETWEEN BUSINESS AND IT STRATEGIES IMPORTANT?

All **respondents** stated that alignment between business and IT to be important. One of the reasons provided was that PRASA had as yet not addressed the strategic issue of aligning business and IT. A second reason given was that the strategic alignment of business and IT was needed to assist the company in overcoming the dysfunctional arrangements which prevailed.

The **business plan** stated PRASA's business model was based on the 4-R model of (Gouillart & Kelly, 1995). PRASA reviewed the business through four lenses. These were ***reframing***, which entailed realigning the company to address the new mandate and meet the requirements of its main stakeholder's transport and socio-economic objectives. The second lens was to ***re-organise*** the balance sheet to affect delivery on the new mandate. Thirdly, ***revitalisation*** will take place by creating an expanded and synergistic opportunity for growth through a revised capital programme. Fourthly, a ***renewal*** programme will be put in place with a focus on human capital development and organisational culture. These lenses were then accommodated in three phases by the organisation. Table 19 depicts how PRASA is aligned with the National Department of Transport's strategy utilising a phased approach over time.

Table 19 Alignment with National Department of Transport's strategy

Organisation	Phase 1 2007-2010	Phase 2 2011-2014	Phase 3 2015-2020
Department of Transport	Accelerated Recovery & Catalytic Integrated Rapid Public Transport Network Projects	Promote & deliver basic networks	Advance and sustain accessible networks
Passenger Rail Agency of South Africa	Establishment & positioning	Consolidation	Integration & expansion
PRASA Rail			
Metrorail	Stabilisation	Recovery	Growth
Shosholoza Meyl	Stabilisation / repositioning	Consolidation/repositioning	Expansion
Autopax	Stabilisation / repositioning	Consolidation/repositioning	Expansion
Intersite	Alignment	Consolidation	Expansion

The detail of phase one is presented in table 20 and reflects the alignment process of the first phase of PRASA strategic positioning. This phase does not address strategic business and IT alignment. In fact, no phase addresses the issue at all.

Table 20 The alignment process of the first phase of PRASA strategic positioning

PRASA Phase 1 – establishment & strategic positioning over the next 18 months (2009 - 2010)

The creation of PRASA necessitates a complete review of the overall functional and organisational structuring of the consolidated organisation.

Phase 1 will require a focus on the following:

• Rapid restructuring of the business as well as re-definition and allocation of roles, functions and responsibilities

• Consolidation of assets under PRASA followed by the (re)valuation of asset base

• Development of a borrowing plan & programme to motivate the appropriate borrowing limits

• Formalising PRASA's tax status and its businesses with SARS

• Establishment of Metrorail as a business unit of PRASA with a separate head office, with Metrorail regions strictly treated as operational units rather than business units in their own right.

• The delivery of high-quality services in main commuter corridors in the main Metrorail operating

areas

• The ring-fencing of Shosholoza Meyl (as a division of PRASA) and Autopax (as a subsidiary of PRASA)

• The re-focusing of Intersite's mandate with a specific focus to becoming a property development specialist, maximising opportunities through station upgrades and development, as well as of transit oriented developments

• the creation and development of a strong PRASA identity and brand that defines PRASA

. enables successful brand management of the operational brands (Metrorail, Shosholoza Meyl, Autopax and Intersite)

. The strategic positioning of PRASA as provider of integrated public transport solutions.

. The evaluation of the potential for acquiring a rail engineering company to reduce the vulnerability to third party suppliers in the rolling stock supply chain

. A strong focus on strengthening corporate governance through the formulation of clear group policies and procedures

An important omission in the business plan was the lack of identifying the strategic importance of business and IT alignment. This should be viewed as a serious omission taking into account the importance of information technology governance as required by the King 3 report. This code of governance for South Africa states that the board is responsible for IT governance. Furthermore, statement 5.2 says that ***"IT should be aligned with the performance and sustainability objectives of the company"***. This links with the aim of this research whereby the extent of strategic alignment between business and IT is the focal point. It also gives credence to the role of performance in aligning business and IT.

Research finding 1: Although the respondents indicated the importance of strategic alignment between business and IT, it is not reflected in the company's business plan or its annual report.

4.6 SUB-QUESTION 2: HOW CAN THE STRATEGIC ALIGNMENT MODEL (SAM) BE UTILISED FOR STRATEGIC ALIGNMENT BETWEEN BUSINESS AND IT?

To improve the strategic management of information technology, Henderson and Venkatraman (1993) developed a framework (chapter 2.4.2.) which they called the Strategic Alignment Model (SAM). This model was defined in terms of four fundamental domains of

strategic choice namely business strategy, information technology strategy, organisational infrastructure and processes, and information technology infrastructure and processes. The model was further defined in terms of two fundamental characteristics of strategic management namely the strategic fit (the interrelationship between external and internal components) and functional integration (integration between business and functional domains). These are extensively dealt with in chapter two. This question sought to identify which domain of strategic choice PRASA was currently engaged in. The four domains are shown below in table 21 and are explained in detail in appendix 7.3.1.

Table 21 The strategic perspectives of the SAM model

TECHNOLOGY POTENTIAL - the driver is the business strategy
STRATEGY EXECUTION ALIGNMENT - the driver is the business strategy
COMPETITIVE POTENTIAL - the driver is the IT strategy
SERVICE LEVEL - the driver is the IT strategy

The predominant view of the respondents was that of the ***strategic execution alignment perspective of*** the SAM model as depicted in table 22. IT respondents agreed that IT was viewed as a cost centre by business and did not strategically add value to PRASA. The business view of IT is that of a cost centre. As one business manager stated "IT is probably at the cost centre level". This approach/view is emphasised by the absence of any IT strategic alignment reference in the business plan and annual reports.

Table 22 Strategic execution alignment perspective of the Strategic Alignment Model (Henderson & Venkatraman, 1993) compared with PRASA's approach

Perspective	Driver	Role of top management	Role of IS management	Performance criteria
Strategy execution - this perspective is only partially adopted at PRASA	Business strategy - business dictates the corporate strategy, ICT not included	Strategy formulator - top management do not formulate any IT strategy nor do they give any input into the IT strategic plan	Strategic implementer - IT management do not participate in implementing the business strategy	Cost/Service centre - IT seen as a cost/service centre

Research finding 2: Using the SAM model to understand strategic alignment between business and IT, it was difficult to find a perfect fit for PRASA in the model. The closest fit was that of the strategic alignment execution perspective. From this perspective business is the driver of strategy and IT implements the strategy. The triangulated research reveals that IT plays no role in the strategic process at PRASA.

4.7 SUB-QUESTION 3: HOW CAN THE SIX FACTORS OF THE STRATEGIC ALIGNMENT MATURITY MODEL BE USED TO STRATEGICALLY ALIGN BUSINESS AND IT?

This sub-question sought to ascertain the maturity of strategic alignment between business and IT at PRASA. The SAMM model with its six constructs is shown in figure 9. The interviewees were asked questions related to the six factors of strategic alignment maturity. The business plan and the company's annual report were also used to corroborate what was obtained from the interviews. The structure of the response to this question was to firstly present the model and then the overall results obtained from the interviews, the business plan and the annual report. The results from the six individual constructs were then presented. Finally an overall conclusion was summarised. The individual responses to each of the six factors are presented in appendix 3.

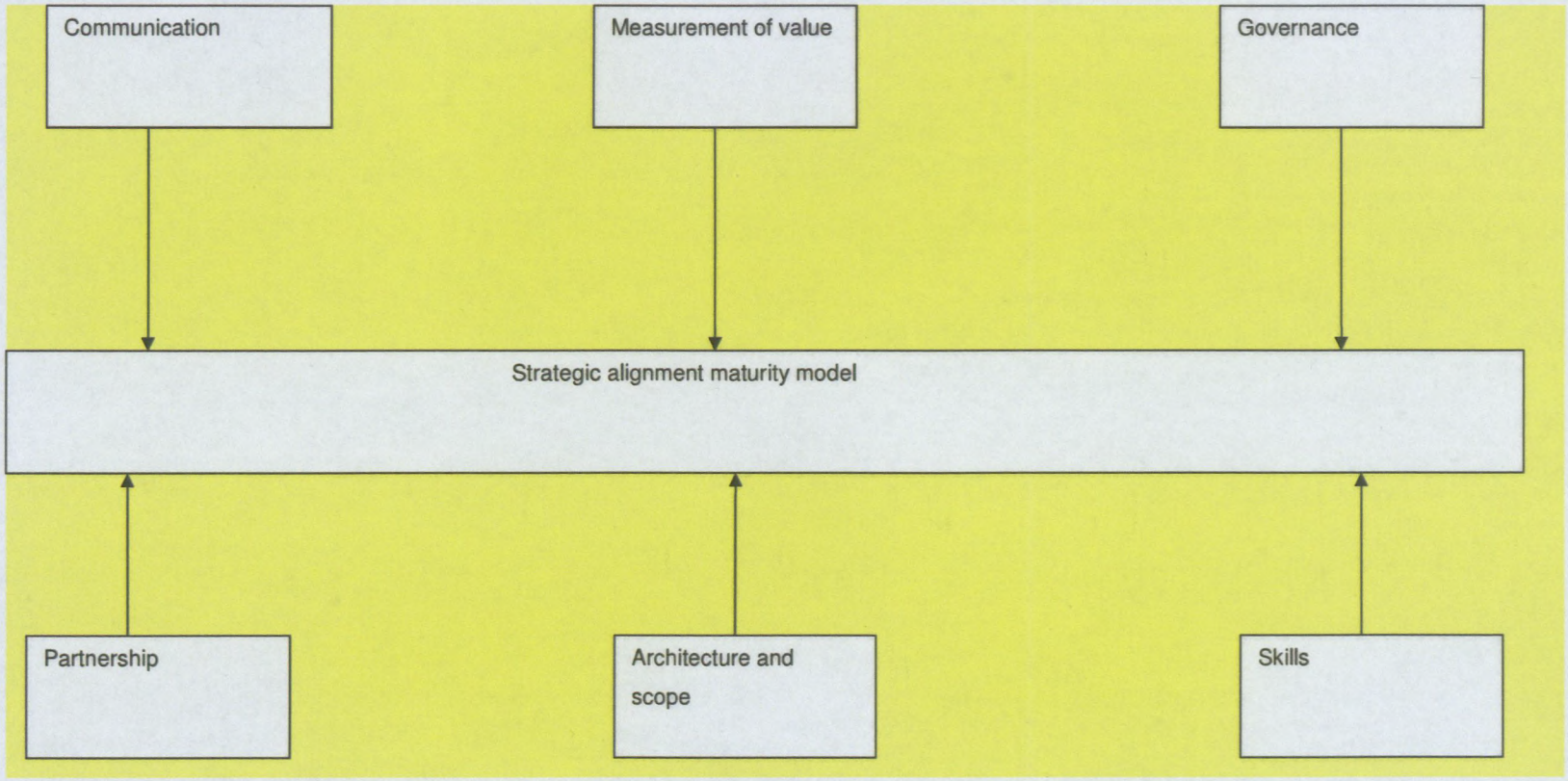


Figure 9 Strategic Alignment Maturity Model depicting six perspectives (Luftman & Kempaiah, 2007)

4.7.1 Overall stakeholder response to sub-question 3

The overall results of the response to sub-question 3 are presented in table 23. The responses to each construct are then presented.

Table 23 Stakeholder response to research question

Stakeholders	Strategic Alignment Maturity Model
Business Management	Business does not understand IT, the business seriously underestimates the role IT can play. The counter is also true - IT does not understand business, their strategies do not always support what the business wishes to achieve. From a business perspective the strategic alignment maturity is not being managed.
IT Management	The general consensus gleaned from the interviewee response was that the alignment maturity levels between business and IT was poor. This can be observed by the individual responses presented in the tables below.
Business plan	There is a fair amount of information on the six SAMM perspectives. It must be noted that communication is hardly mentioned. This is strange as **communication** was one of the company's values in the previous business plan. A new set of **values** has been adopted by the company and as such would require a rollout. Governance is mentioned extensively in general with one mention made specifically to IT governance, talks about developing an IT **governance** structure. The need to re-capitalise PRASA as a major player in supporting the delivery of government's socio-economic and transport intentions requires the identification of key strategic **partners** and investors. Building strategic alliances and strengthening relationships, both nationally and internationally, will assist PRASA in addressing its short-term needs while positioning the organisation for longer-term growth into Southern Africa. One mention is made of **architecture** viz internally, the integration of systems across urban and regional services requires a single enterprise platform and architecture. The following **skills** are identified as critical - passenger rail in South Africa faces many challenges as a result of a long history of inadequate investment in rail rolling stock, infrastructure and operations as well as the loss of appropriate managerial and technical (engineering) skills within the industry. The shortage of such critical **skills** has a direct negative impact on the delivery of services. The business plan addresses ways to overcome this problem. In summary, more mention is made of some perspectives than others.

Annual report	The six perspectives are dealt with various degrees of information. For example, **communication** is one of the values but is not mentioned. The **values** are spelled out but no mention is made of the level of implementation within the organisation. **Governance** is dealt with from a business perspective with no mention of IT governance. What is noteworthy is that the auditor did not mention any significant findings. The company will also **partner** with rail and transport authorities to plan and deliver rail and other transport infrastructure. No mention is made of **architecture and scope**. On the **skills** perspective the corporation aims to create capacity as well as retain skills. Focus in this area was to prepare for the operations and infrastructure maintenance challenges that needed to be addressed.

Research finding 3: From the triangulated response received from the three research instruments it was clear that the strategic alignment maturity between business and IT was not being managed.

4.7.2 Response to communication construct

The general consensus from the respondents was that business did not understand IT and that IT did not understand the business. Inter/intra-organisational communication was also poor. This is a symptom of poor communication between business and IT. Knowledge sharing also did not take place. The individual responses can be found in appendix 7.3.2.

Research finding 4: Communication between business and IT is poor. and the inverse is also true.

4.7.3 Response to value construct

The company is busy rolling out a new set of values, which has not been disseminated throughout the organisation. The IT managers said that this was due to the company still implementing the merger and becoming a new entity with various businesses needing to be standardised, integrated and consolidated. Values are dealt with extensively in the business and annual reports.

Research finding 5: The values of the organisation, although published in the business plan and annual report, were not understood by all due to the amalgamation of various businesses to form one company namely PRASA.

4.7.4 Response to the governance construct

From a business perspective there was consensus that governance was firmly entrenched in the company. From the IT perspective there was less consensus; this could be due to the formation of the governance department within ICT only since the formation of PRASA. There are steering committees, budgetary control, strategic planning and organisational structures in place as regards the business but not so in ICT. There was extensive coverage of governance in general, but not from an IT

perspective in the business plan and annual reports.

Research finding 6: Governance was entrenched in the organisation; however, the maturity level of IT governance was low.

4.7.5 Response to partnership construct

IT managers responded that the role of ICT was that of a service provider (cost centre). ICT was not seen as a strategic partner of the business see Table 32 . From the business plan the partnership perspective recognised the need to identify key strategic partners and investors to deliver on the government's socio-economic plans. The annual report only discussed how the business will partner with transport and rail authorities to plan and deliver on rail and infrastructure projects.

Research finding 7: The business managers felt that the ICT value was not fully realised. There is no shared vision between business and ICT. The role of ICT in strategic business goals is questioned.

4.7.6 Response to the architecture and scope construct

An Enterprise Architecture (EA) department has recently been introduced in the company. ICT managers were positive on the impact (EA) would have if implemented correctly. There is one mention in the business plan and none in the annual report.

Research finding 8: The business value to be derived from enterprise architecture is still in the early stages of strategic alignment maturity.

4.7.7 Response to the skills construct

In these recessionary times ICT has identified a severe shortage of resources especially in the business analysis field. The business plan also addresses the lack of critical skills which has a direct negative impact on delivery of services. The annual report states that the organisation needs to create capacity as well as retain skills, especially in the operations and infrastructure departments

Research finding 9: Currently ICT does not have the skills to become a business value partner.

4.8 SUB-QUESTION 4: HOW CAN THE BALANCED SCORECARD BE USED TO STRATEGICALLY ALIGN BUSINESS AND IT?

This question seeks clarity on the five balanced scorecard best practices for an organisation to be strategically focused. One of the best practices is alignment throughout the organisation. The others are shown in table 24 below. The format for this data analysis is firstly the model shown, and then the consensus received from interviews of business and IT managers plus the business plan and annual report. This is followed by detailed results received for each best practice and finally a conclusion is

presented.

Table 24 Stakeholder response to research question

Stakeholders	Balanced scorecard best practices
Business Management	The managers interviewed knew what a balanced scorecard was but were not clear as to what the company's measures were for the year.
IT Man	The managers interviewed knew what a balanced scorecard were but were not clear as to what the measures for the year were.
Business Plan	The strategic objectives of the company are derived from the board of control's key performance areas. These are shown in appendix 4. There are seven strategic objectives and these are converted to BSC format. The results of the performance measures are reported in the annual report.
Annual report	Balanced scorecard performance measures are extensively reported on and are attached in appendix 4.

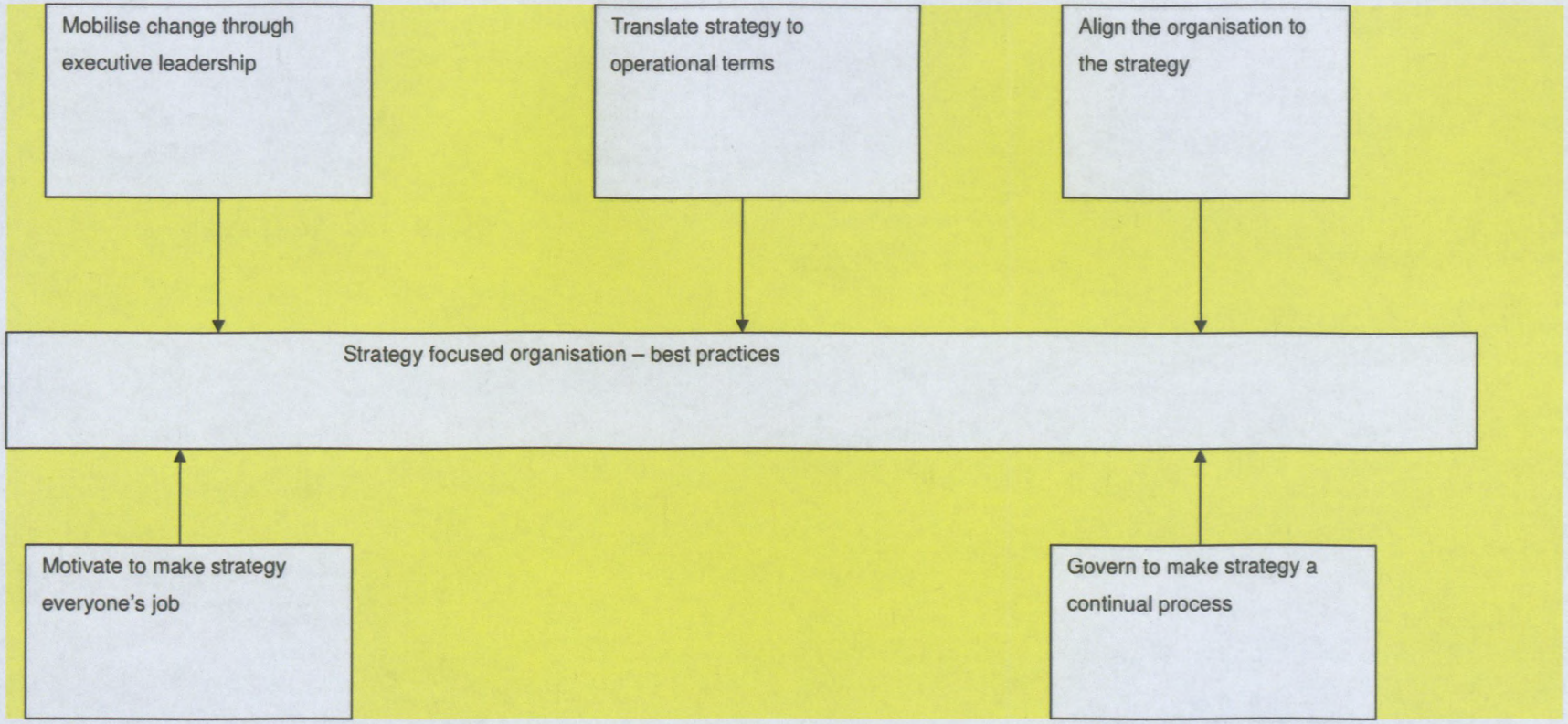


Figure 10 Balanced scorecard best practices (Kaplan & Norton, 2001a)

Table 25 Alignment of key performance area and strategic objectives

Board of Control key performance area	PRASA strategic objective
Contribute to government's objective of safe, affordable, accessible and reliable public transport provision	Service excellence in the provision of integrated best practice public transport solutions that are affordable, reliable, predictable and operationally safe
Investment in infrastructure to contribute to growth and development	Asset utilisation - ensuring the productive investment in, and use of, assets and the property portfolio through the application of total life-cycle management practices, processes and procedures to all assets
Provision of sustainable quality services	Service quality & passenger growth - sustaining dependable and superior customer service benefit that achieves a high customer satisfaction
Financial effectiveness to maximize operational efficiencies	Financial effectiveness - ensuring efficient and effective deployment of available resources to achieve the required results and outcomes through the productive use of all resources
Corporate governance and legislative compliance	Governance and compliance - ensuring controlled compliance to statutory requirements by entrenching a culture of corporate governance practices and accountability as well as fraud prevention within PRASA
Contribution to the achievement of government's socio-economic goals	Strategic sourcing through an effective and efficient supply chain management process and promotion of broad-based economic empowerment and industrial policy objectives
Human capital resources development	Learning and growth - ensuring that the appropriate knowledge and skills are acquired and maintained to sustain change and improvement for the betterment of the organisation through developing human capital development processes to build human capital capabilities

These seven strategic objectives are then converted to BSC format. This is shown in appendices 2 and 4.

4.8.1 Response to: Change through executive leadership

There has been a change in leadership that resulted in a new strategy being planned to accommodate the various business units into the PRASA family as a result of the merger. Top management's commitment is questioned. The case for change has not been clearly articulated. The leadership throughout the new entity is not engaged - see table 35 in appendix 7.3.3. In the business plan and the annual report the vision and strategy are articulated and clarified.

Research finding 10: The case for change by executive leadership has not been clearly articulated.

4.8.2 Response to: Translate the strategy into operational terms

The organisation utilises the balanced scorecard as a performance management tool. The respondents understood what a BSC was, but did not know the performance measures as articulated in the business plan. Targets had been established but some not met as reflected in the annual plan. Accountability has been poorly assigned. See table 36 in appendix 7.3.3.

Research finding 11: The strategy has not been fully translated into operational terms throughout the organisation.

4.8.3 Response to: Align the organisation to its strategy

Respondents felt that synergies between departments were missing. The corporate role was not clearly defined, corporate and business units were not aligned, support units were not aligned, and IT objectives were not aligned to the corporate strategic plan. The business plan makes much reference to alignment but does not mention business and ICT strategic alignment. The annual report does not mention the business and ICT strategic alignment at all. The absence of strategic alignment between business and IT not being addressed in the business plan and annual report, leads to the IT department not being aligned to the business strategy.

Research finding 12: Currently the extent of business and IT strategic alignment is not defined.

4.8.4 Response to: Motivate to ensure all understand the strategy

Strategic awareness has not been created in the organisation. Personal goals are not aligned to the organisation's strategy. Strategic competence (the skills and knowledge required by the

employees to support the strategy) is not in place - see individual comments in table 38 in appendix 7.3.3.

Research finding 13: Awareness of the strategy by employees is not created, therefore they do not understand the extent of strategic alignment between business and IT.

4.8.5 Response to: Govern to make strategy a continual process

There is a performance management reporting system in place. Strategic review meetings do not take place. Planning, budgeting and strategy integration are carried out at the corporate level. Business and ICT planning is not linked to the strategy. Knowledge sharing is not linked to the strategy.

Research finding 14: Strategy monitoring is not a continual process, thus the extent of strategic alignment between business and IT cannot be monitored.

4.8.5.1 Summary

The balanced scorecard measurement is firmly entrenched in the company as a performance measurement tool. Managers in general knew what a BSC was, but were not always clear on what the measures for the year were. The extent of strategic alignment between business and IT using the balanced scorecard could not be measured because IT did not play a strategic role.

4.9 SUB-QUESTION 5: WHY IS ALIGNMENT OF BUSINESS AND IT STRATEGIES A PROBLEM AT PRASA?

In the business plan there is extensive mention made of alignment, in general but not specifically, between the business and IT. The alignment between the two might be implied but it is not explicit. The business plan stated that the complexity of simultaneous processes poses different challenges on a number of different levels. At a strategic level, the plethora of business processes that require review, alignment and amendment to ensure that the mandate could be affected, was identified as a challenge. The critical importance of change management and the role of IT in capturing business processes is the only mention of IT's involvement in the business plan.

In the annual report it was stated that consolidation of PRASA is a multi-faceted process within which the human resources (HR) department facilitates the appropriate human capital capabilities at all levels within the organisation. The complexities of these simultaneous processes pose various challenges on different levels. At a strategic level there were many policies, practices and processes that required review, alignment and amendment to ensure

that the businesses are supported appropriately. The respondents did not feel that this was the practice. They also felt that the problem of alignment could be ascribed to the misalignment throughout the organisation due to planning, budgeting and integration.

Research finding 15: The strategic alignment value of ICT is not recognised by the company.

Conclusion

There is recognition that alignment in general is a problem for the organisation. The business plan and annual report propose ways of addressing this problem mainly through HR interventions. The extent of problems with strategically aligning business and IT is not clearly defined. Table 26 addresses the consolidated findings of this research.

Table 26 Consolidated research findings

Research finding 1: The extent and importance of strategic alignment between business and IT was not reflected in the interviews with respondents, in the company's business plan or its annual report.
Research finding 2: Using the SAM model to understand strategic alignment between business and IT, it was difficult to find a perfect fit for PRASA in the model. The closest fit was that of the strategic alignment execution perspective. In this perspective business was the driver of strategy and IT implements the business strategy. The triangulated research reveals that IT plays no role in the strategic business process at PRASA.
Research finding 3: From the triangulated response received from the three research instruments it was clear that the strategic alignment maturity between business and IT was not being managed.
Research finding 4: Communication between business and IT was poor and the inverse was also true.
Research finding 5: The values of the organisation, although published in the business plan and annual report, was not understood by all due to the amalgamation of various businesses to form one company namely PRASA.
Research finding 6: Governance was entrenched in the organisation, however, the maturity level of IT governance was low.
Research finding 7: The business perception of ICT value is not fully realised. There is no shared vision between business and ICT. The role of ICT in strategic business goals is

questioned..

Research finding 8: The business value to be derived from enterprise architecture is not fully understood by the organisation.

Research finding 9: Currently ICT does not have the skills to become a business value partner.

Research finding 10: The case for change by executive leadership has not been clearly articulated.

Research finding 11: The strategy has not been fully translated into operational terms throughout the organisation.

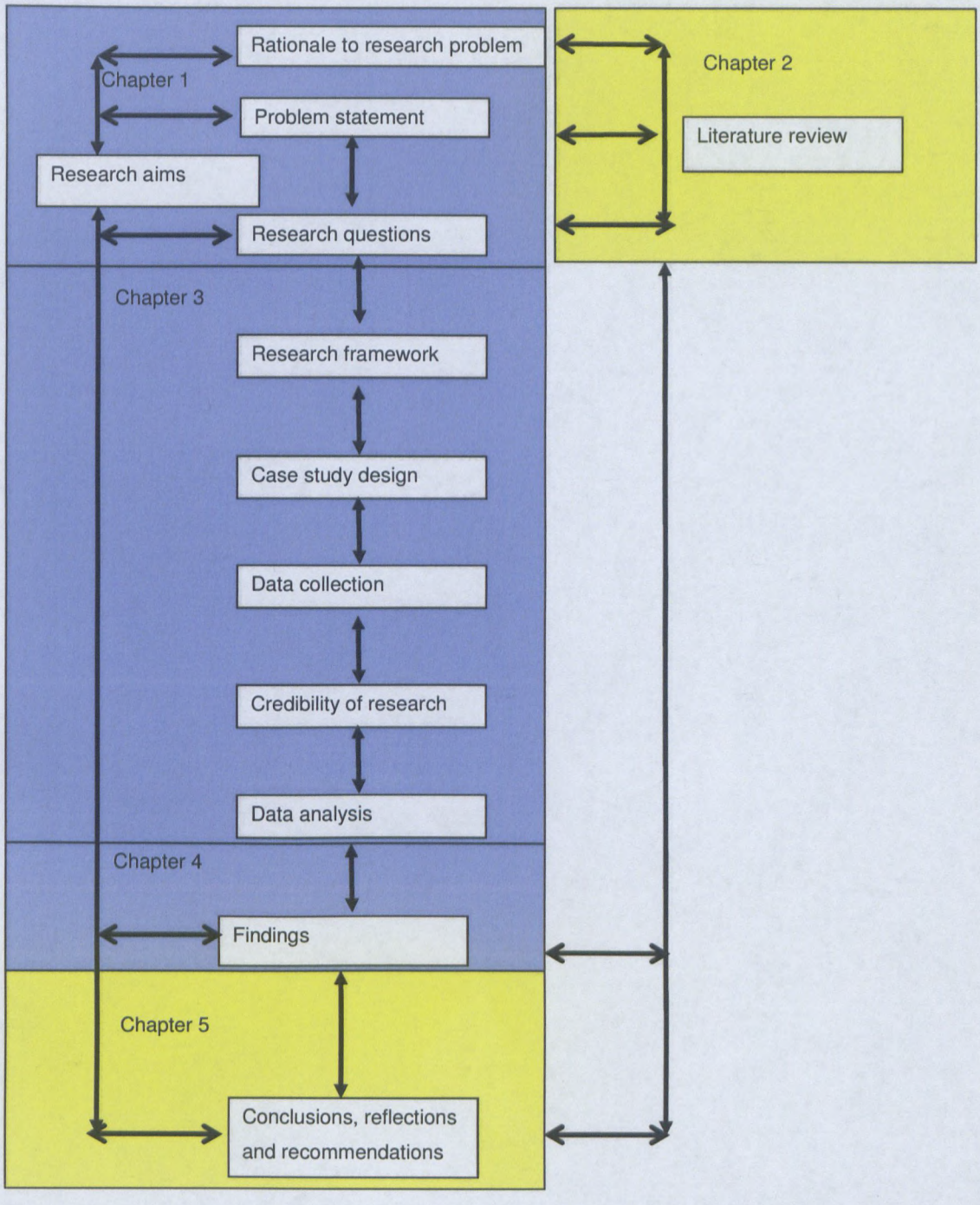
Research finding 12: Currently the extent of business and IT strategic alignment is not defined.

Research finding 13: Awareness of the strategy by the rank and file of employees is not created, therefore they do not understand the extent of strategic alignment between business and IT.

Research finding 14: Strategy monitoring is not a continual process, thus the extent of strategic alignment between business and IT cannot be monitored.

Research finding 15: The strategic alignment value of ICT is not recognised by the company.

5 CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS



5.1 INTRODUCTION

The chapter begins with a summary of the main and subsidiary research questions, the literature review and then the research design. What was learnt from this research will then be presented in the discussion section. Finally recommendations for further research, policy-making and practice will be suggested.

5.2 SUMMARY

The research question posed was:

> ***How can PRASA manage strategic alignment between business and IT?***

To answer the main research question five sub-questions were posed. The sub-questions to be answered are presented below.

1. Why is the need for the alignment between business and IT strategies important for PRASA?

2. How can the Strategic Alignment Model (SAM) be utilised to understand the strategic alignment between business and IT at PRASA?

3. How can the six factors of the Strategic Alignment Maturity Model (SAMM) be used to strategically align the PRASA business and IT strategies?

4. How can the balanced scorecard be used to strategically align the PRASA business and IT strategies?

5. Why is strategic alignment between business and IT a problem for PRASA?

The aim of this research was to understand why the misalignment between business and IT strategies exists at PRASA. A further aim was to propose a guideline to manage alignment between business and IT strategies with the intention of overcoming the fragmented and dysfunctional institutional arrangements

Chapter 1 provided an overview of the research starting with the introduction and context of PRASA. The research question together with the sub-questions with their objectives and

methods were then introduced. This was followed by the research aim. The research philosophy, design, delineation and contribution were then presented.

Chapter 2 dealt with the theories obtained from a literature review. This was divided into four sub-sections. The first dealt with the definitions of business and IT strategies. A literature review of the theories explaining the alignment between business and IT strategies was then dealt with. Thirdly, the three theoretical models used in the research were presented. Finally, a literature review on the factors that contribute to improved alignment between business and IT strategies was carried out.

Chapter 3 investigated the research design and methodology. An introduction was followed by the research framework, case study design, data collection methods, validity of the findings, analysis of the data and finally the delineation of the study.

Chapter 4 – a data analysis was carried out in this chapter. The introduction was followed by the identification of the case company, the respondents who were interviewed, how the data was analysed, and finally, the responses given to each sub-question was produced.

5.3 ANSWERS TO THE QUESTIONS

Chan and Reich (2007a) have provided over one hundred and fifty studies on the strategic alignment of business with IT. Addressing the IT/business alignment problem remains an important area of investigation. This was demonstrated by research over the past three decades and has consistently identified IT/business alignment as a pervasive and persistent problem (Luftman,Dorociak,Kempaiah and Rigoni, 2008). Silvius *et al.* (2009) suggest that still more research must be carried out on this subject.

5.4 DISCUSSION

This section presented a high-level view of the lessons that can be learned from this study by using the reflective process. Reflection is a process of deriving meaning from the lessons learnt. The methodological reflection looked at the approach of this research and how it can be improved. Comparisons to other studies were made by means of substantive reflection. Finally, the scientific reflection process was introduced whereby the findings of this research's contribution to the body of knowledge are presented.

5.4.1 Methodological reflection

The interpretive case study approach produced rich results. The case study was subjective and qualitative in nature. Rich meanings were induced from the semi-structured interview method. The use of triangulation by comparing the results obtained from the interviews

together with secondary data obtained from the business plan and annual report proved invaluable to this research.

Some limitations to this research which could have an effect on the findings is the fact that the sample could have been larger, the sample could have been of a wider spectrum and not just managers, and the case was limited to PRASA Western Cape. This is a business unit of PRASA and the findings cannot be generalised to the greater PRASA family.

Although a qualitative study was carried out, a quantitative objective study could also have been conducted to support the findings.

5.4.2 Substantive reflection

Chan and Reich (2007a) have provided a comprehensive annotated bibliography on the alignment of business and IT strategies. The substantive reflection addressed each sub-question and the individual constructs within that sub-question to compare results from this research to those of comparative studies. In order to aid the substantive reflection, a data collection matrix is presented at the end of the chapter. In the data collection matrix, research questions, literature review theories, and the research findings are tabulated in a single table. This is shown in table 28.

5.4.2.1 Sub-question 1: Why is alignment between business and IT strategies important?

Research finding 1: The extent and importance of strategic alignment between business and IT was not reflected in the interviews with respondents, the company's business plan or its annual report.

Nickels (2004) stated that alignment acted as a positive predictor of overall business performance. Luftman and Kempaiah (2007) found a positive correlation between business and IT strategic alignment and that a higher firm performance can be associated with a higher alignment maturity. Leonard (2008) points out that there was empirical evidence that alignment can improve organisational performance.

The findings at PRASA of the alignment between business and IT showed that there is a misalignment that could possibly lead to a lower firm performance as suggested by Leonard (2008). It could benefit PRASA largely to prioritise the issue of the lack of alignment between business and IT to a higher priority to overcome the fragmented and dysfunctional institutional arrangements that exist in the provision of passenger services.

5.4.2.2 Sub-question 2: How can the Strategic Alignment Model (SAM) be utilised for strategic alignment between business and IT?

Research finding 2: Using the SAM model to understand strategic alignment between business and IT, it was difficult to find a perfect fit for PRASA in the model. The closest fit was that of the strategic alignment execution perspective. In this perspective, business was the driver of strategy, and IT implements the business strategy. The triangulated research reveals that IT plays no role in the strategic business process at PRASA.

The most widely cited strategic alignment model is the SAM model (Nickels & Janz, 2010). The results of alignment from the SAM model are a fit between and integration of business and IT strategies and their respective infrastructures. There are four permutations of strategic choice in the SAM model. The most prevalent is the strategy execution alignment perspective. .Although this perspective might not be the most optimal, it is up to the business to decide on the strategic choice to use. It is important for the PRASA business to understand that IT should play a role in the strategies of PRASA through the alignment of business and IT, in order to improve services internally as well as externally

5.4.2.3 How can the six factors of the Strategic Alignment Maturity Model be used to manage the extent of strategic alignment between business and IT?

Research finding 3: From the triangulated response received from the three research instruments it was clear that the strategic alignment maturity between business and IT was not being managed.

Luftman and Kempaiah (2007) found a positive correlation between higher levels of strategic alignment maturity and firm performance. The extent of alignment maturity of the organisation was found to be poor. This can be ascribed to the low level of strategic alignment engagement between business and IT alignment.

The next set of research findings deal with the response to the six components of the SAMM model.

Communication

Research finding 4: Communication between business and IT was poor and the inverse was also true.

The social dimension of strategic alignment was found to be a good predictor of alignment. The higher the level of communications between executives resulted in a higher level of alignment in organisations. The shared domain of knowledge between executives and long term business direction led to alignment (Reich & Benbasat, 2000). Culture played a role in

interpersonal communication and effective communication was a key element of alignment (Silvius *et al.* 2009) The extent of communication in strategically aligning business with IT at PRASA was not clearly demonstrated. The lack of communication and knowledge sharing is an obstacle and must be addressed by senior management before alignment between business and IT will be possible.

Values

Research finding 5: The values of the organisation although published in the business plan and annual report was not understood by all due to the amalgamation of various businesses to form one company namely PRASA

Shared values between employees allows them to work together to meet a common goal (Chan & Reich, 2007b). The relationship between organisational culture and SAMM maturity is supported, especially on the variables "governance", "partnership" and "skills". The values maturity variable was found by Driessen and Silvius (2010) to have weak maturity when culture was compared to it.

Governance

Research finding 6: Governance was entrenched in the organisation, however, the maturity level of IT governance was low

De Haes and Van Grembergen (2008) found that the maturity of IT governance was correlated to a higher level of maturity of the strategic alignment between business and IT when compared to organisations with less mature IT governance practices in place. To improve the maturity of the governance variable, organisations would need a mature mix of structures, processes and relational mechanisms.

Partnership

Research finding 7: The business perception of ICT value is not fully realised. There is no shared vision between business and ICT. The role of ICT in strategic business goals is questioned. Preston *et al.* (2008) found that a strong correlation in the partnership between the chief information officer (CIO) and business executives influenced the CIO's level of decision-making authority. Partnership includes shared visions, perceptions and goals of business and IT executives (Silvius *et al.* 2009). This would imply that there needs to be a mature partnership relationship established at the executive level between business and IT.

Architecture and scope

Research finding 8: The business value to be derived from enterprise architecture is not fully understood by the organisation.

Maturity of scope and architecture practices contributed to improved strategic alignment of business and IT (Luftman & Kempaiah, 2007). However, they caution that this practice alone is not responsible for this improvement in alignment; it must be measured together with other best practices. Engaging the business in the development of a mature enterprise architecture would assist in strategically aligning business and IT strategies.

Skills

Research finding 9: Currently ICT does not have the skills to become a business value partner.

The importance of knowledge in the alignment of business and IT was confirmed by (Basellier & Benbasat, 2007). Skills and competence will not lead to alignment if the business and the individual's ability to execute is impeded (Silvius *et al.* 2009). PRASA has identified the shortage of skills in key technical areas as a problem. However, they do not identify the shortage of IT skills as a problem.

The next set of responses deals with the best practices of the balanced scorecard.

5.4.2.4 Sub-question 4: How can the balanced scorecard be used to strategically align business and IT?

Change through executive leadership

Research finding 10: The case for change by executive leadership has not been clearly articulated.

Without strong executive leadership, constructive change is not possible (Kaplan & Norton, 2005). The PRASA business plan recognises the need for change stating that the old ways of doing things will not take the company to the next level. This can only be done with rapid change, and for the company to be effective and forward-looking it would have to build on its most important resource, the human resource.

Translate strategy into operational terms

Research finding 11: The strategy has not been fully translated into operational terms throughout the organisation.

Silvius (2007) said that by ICT working with business to translate strategy into performance indicators (operational terms) it would strengthen the relationship between business and ICT.

From a PRASA perspective this is reflected in appendix 2, which shows the performance against objectives, the planned versus actual results achieved. This appendix shows the planned versus actual performance measures and the variances in the two, in the BSC format. Appendix 4 shows the business performance and shows clearly how the company translated its strategic objectives into operational terms. This is shown in the classic BSC format of strategic objectives being translated into measures and targets,

Align the organisation to its strategy

Research finding 12: Currently the extent of business and IT strategic alignment is not defined.

Multiple studies have found that benefits can be derived from strategic alignment of business and IT (Chan & Reich, 2007b). Appendix 4 shows how the various business units are aligned with the strategic objectives of the organisation. The company has six key strategic objectives to which the entire organisation must be aligned and this is shown in appendix 4.

Motivate to make sure all understand the strategy

Research finding 13: Awareness of the strategy by the rank and file of employees is not created. Therefore they do not understand the extent of the strategic alignment between business and IT.

Koo,Koo and Luk (2008) emphasised the importance of ensuring that performance measures (which are derived from strategic objectives) are clear to all concerned and are used by individuals with similar roles to ensure that the criteria are interpreted in the same way. Employees who do not understand their company's strategy cannot possibly link their daily activities to its successful execution (Kaplan,Norton and Ansari (2010). This is not the situation at PRASA although the strategic objectives are clearly reflected in appendices 2 and 4.

Govern to make strategy a continual process

Research finding 14: Strategy monitoring is not a continual process, thus the extent of strategic alignment between business and IT cannot be monitored.

Companies must continually improve ongoing processes (Kaplan and Norton (2008) measured by speed, quality, time and cost. The monitoring of the strategic objectives is firstly formulated in the business plan. The actual results obtained from the measurement of the

strategic objectives, together with the variances, are reflected in the company's annual report. The continual monitoring of the company's processes gives an indication where the company is succeeding and where it needs to improve. This is shown in appendix 4.

5.4.2.5 Sub-question 5: Why is alignment of business and IT strategies a problem at PRASA?

Research finding 15: The strategic alignment value of ICT is not recognised by the company

Luftman and Brier (1999) recommended minimising the inhibitors that prevent the achieving and sustaining of business/IT alignment. These inhibitors lead to misalignment or an alignment gap (detailed in section 1.4). Fonvielle and Carr (2001) identified several dangers of misalignment - they caution that this would make an organisation vulnerable to competition and market forces, and this would impact on the organisation's effectivity and also motivation of staff. Their study of two hundred and ninety three organisations revealed that in over two thirds of poor-performing organisations, employees did not understand the company's goals. Peppard and Breu (2003) present an interesting reason for the misalignment of business and IT strategies. They question the reason for aligning of business and IT strategies in the first place. They recommend the co-evolution theory which offers the opportunity to explore co-evolving interactions, interrelationships, and effects, as both the business and IT strategies evolve. Rathnam *et al.* (2004), in a case study of a Fortune 500 financial company, found that the reason why business and IT strategic alignment gaps occurred was due to strategy, tactics, communication and education. These are shown in table 27.

At PRASA the problem of aligning business and IT strategies is the fact that the strategic contribution IT can add to the company is not addressed at the highest level, that is, the business plan and annual report.

Table 27 Why business strategy and IT strategy alignment gaps exist in the organisation (Rathnam *et al.* 2004)

Strategy
Lack of business strategy
No communication of the business strategy
Misalignment between business areas
Lack of IT participation in business strategy development

Tactics

Lack of well-defined business requirements

Too many enterprise priorities

Lack of focus on a few high-value initiatives

Limited use of business process re-engineering and disagreement about when and how it should occur

Limited business accountability for delivering benefits promised in business-driven IT initiatives

Lack of collaboration between business and IT departments

Communication

Lack of common terminology between business and IT departments

Poor communication skills of IT personnel

"Us vs. them" mentality between business and IT departments

Education

Lack of enterprise-wide view by business personnel

Lack of understanding about the need to align business strategy and IT strategy

Lack of knowledge concerning IT competencies and scope

From a IT perspective Nickels (2004) has identified misalignment with business strategies as the reactive stance to IT, whereby IT is seen as a cost centre and not a business value partner. From a business perspective the misalignment between business and IT strategies was seen as deriving a lower value from IT investments, which resulted in decreased competitive advantage. Tallon (2007) postulates that alignment is not a universal predictor of firm performance.

All of these factors of misalignment are also the problems encountered at PRASA.

Table 28 Data collection matrix

Research objectives	Sub-questions	Findings in literature review	Findings from this research.	Source	Implications for alignment
Define alignment, business strategy and IT strategy. To critically evaluate the reasons for the importance of alignment between business and IT To use information to evaluate the PRASA position on alignment of IT and business	Why is the extent of alignment between business and IT strategies important?	A positive correlation between business and IT strategic alignment and that a higher firm performance can be associated with a higher alignment maturity	1.Alignment is fundamental to the success of the company	Primary data: semi-structured interview. Secondary data: business plan and annual reports	Most firms have a disconnect between business and IT alignment as can be observed from all the research on the subject
Identify the impact of each domain in the SAM model on business and IT strategic alignment. Identify the current strategic	How can the Strategic Alignment Model (SAM) be utilised to manage strategic alignment between business and IT?	This model is the most cited model on business and IT alignment	2. The predominant domain obtained from the data analysis is that of strategy execution alignment perspective	Primary data: semi-structured interview. Secondary data: business plan and annual reports	It is important to know the strategic choice of the organisation as each choice has a different strategy

SAM perspective at PRASA Compare findings with literature findings			.		
Identify the factors of alignment and their maturity levels Compare the strategic alignment maturity findings with the maturity within PRASA	How can the six factors of the Strategic Alignment Maturity Model be used to manage the extent of strategic alignment between business and IT?	There is a positive correlation between higher levels of strategic alignment maturity and firm performance	3. From the triangulated response received from the three research instruments it is apparent that the strategic alignment maturity between business and IT is poor 4. Communication between business and IT was poor and the inverse was also true. 5.The values of the organisation, although	Primary data: semi-structured interview. Secondary data: business plan and annual reports	Knowing the strategic alignment maturity of the organisation will allow the organisation to strive to improve the maturity and thus the performance of the organisation

			published in the business plan and annual report, were not understood by all due to the amalgamation of various businesses to form one company, namely, PRASA 6. Governance is entrenched in the organisation, however, the maturity level of IT governance is low. 7. The business perception of ICT value is not fully realised. No shared vision between business and ICT. ICT role in strategic business goals is questioned. 8. The business value to be derived from enterprise architecture is		

			not fully understood by the organisation 9. Currently ICT does not have the skills to become a business value partner		
Analyse the balanced scorecard as a performance management system and as strategic management system and its linkage to alignment	How can the balanced scorecard be used to manage the extent of strategic alignment between business and IT?	The balanced scorecard is the most widely used performance measurement tool. The strategy-focused organisation best practices have been proven to assist organisations with alignment to the company's strategy.	10.The case for change is not clearly articulated 11.The strategy has not been fully translated into operational terms throughout the organisation 12. Currently no business and IT strategic alignment. 13. Awareness of the strategy by the rank and file of employees not created. 14. Strategy	Primary data: semi-structured interview. Secondary data: business plan and annual reports	Similarly with the BSC best practices knowing the current level of maturity will allow the organisation to put in place improvement measures

			monitoring not a continual process		
To determine the main issues contributing to the mis-alignment of business and IT strategies	Why is alignment a problem for organisations who wish to improve poor strategic alignment between business and IT?	The company currently has dysfunctional and fragmented processes in place	15. The strategic alignment value of ICT is not recognised by the company	Primary data: semi-structured interview. Secondary data: business plan and annual reports.	By implementing the above the organisation will understand the extent of alignment between business and IT

5.4.3 Scientific reflection

The correlation between the strategic alignment model ("what strategic model do we currently have") and the metrics obtained from the strategic alignment maturity model ("how mature is my organisations alignment"), as well as the performance metrics obtained from measuring the maturity of the organisation to execute strategy ("the how"), was investigated. Many studies have discussed how to carry out a strategic alignment maturity survey, but they don't show how to measure the success. For example, is a mature organisation more or less successful at executing its strategy than an organisation whose alignment is immature? These two metrics, the SAM and SAMM, can act as antecedents to developing a balanced scorecard for the organisation. The success or failure of these two metrics can have an impact on the performance of the organisation. In a nutshell, future research can be carried out to see if there is a correlation between strategic alignment, strategic alignment maturity and strategic execution maturity and how this impacts the overall performance of the organisation.

5.5 CONCLUSIONS

The research provided findings to respond to the research topic:

Alignment between business and IT strategies: A case study at a transport organisation.

The extent and importance of strategic alignment between business and IT was not reflected in the interviews carried out, nor in the company's business plan and annual report. As regards the SAM it was difficult to find a fit for PRASA in one of the perspectives. The closest was that of strategy execution perspective. The strategic alignment maturity between business and IT needs to be addressed as all six factors were still in the immature stage. There is a need for change management, which is effective. The strategy of the organisation was not translated into operational terms for PRASA to execute. There was no alignment throughout PRASA. Not all employees knew the company's strategy. The strategy was not monitored on a continual basis. The triangulated research revealed that IT does not play a role in the strategic business processes of PRASA.

The "as is" alignment between business and IT needs to be assessed as proposed in the recommendations. Alignment should be treated as a dynamic process. This dynamic process would need to be monitored, measured, analysed, reported on and continuously improved. Using this process would enable the organisation to "close the gap", to reach the "to be" objectives it has set.

The aim of this research was to understand why the misalignment between business and IT strategies exists at PRASA. A further aim was to **propose a guideline** to manage alignment between business and IT strategies at PRASA, with the intention of overcoming the fragmented and dysfunctional institutional arrangements.

Misalignment between business and IT is as a result of:

- lack of IT strategy
- no communication of the business strategy
- misalignment between business areas
- lack of IT participation in business strategy development
- lack of well-defined business requirements
- limited business accountability for delivering benefits promised in business-driven IT initiatives
- lack of collaboration between business and IT departments
- lack of common terminology between business and IT departments
- poor communication skills of IT personnel, and

- us vs. them mentality between business and IT departments.

Proposed guidelines for aligning business and IT strategies:

- CIO builds focus on strategy – business and IT strategies to be aligned. CIO must be part of executive.
- Build a strategy-focused leadership team - make sure they understand the business strategy and make them accountable for execution of the business strategy. Use the BSC principles for building a strategy-focused organisation. Encourage the social dimension of alignment, in particular the shared domain knowledge.
- Include IT as an equal partner in development of business strategy - CIO needs to sit at the executive table and jointly develop the organisational strategy.
- Involve IT executives in planning, implementation and resolution of business issues. There needs to be a shared domain of knowledge between business and IT executives for this strategic intervention.
- Ensure strong governance of IT and business resources. Compliance must be monitored at the board level and disseminated throughout the organisation.
- Business and IT should budget, allocate and prioritise IT projects together. Business and IT need to collaborate on the determination of the budget to meet business requirements.
- Communicate strategy throughout the organisation. The SAMM model has identified communication as pivotal to the successful implementation of the organisational strategy.
- Schedule frequent meetings between IT and business executives. Business and IT need to track the strategy on a continuous basis to ensure the objectives are met.
- Build trust between IT executives and business executives. Teamwork is a prerequisite for successfully implementing a winning strategy – this links to the values of the SAMM model.

5.6 RECOMMENDATIONS

In this section recommendations are made from the lessons learnt from this research.

Recommendation 1 - ICT needs to understand which strategic perspective of the strategic alignment model is currently in place?

The organisation needs to do an assessment to identify the current strategic alignment perspective. Once this is done it can then apply the appropriate drivers, roles and performance criteria to deliver on this perspective. For example, the research revealed that the strategic execution alignment perspective was the current perspective.

Recommendation 2 – What is the strategic alignment maturity between business and ICT?

A survey can be carried out throughout the PRASA organisation to ascertain the current strategic alignment maturity between business and ICT. It is recommended that the survey provided by (Luftman & Kempaiah, 2007) be used.

Recommendation 3 - What strategic execution best practices can be used to support balanced scorecard performance metrics?

A survey can be carried out throughout the PRASA organisation to gauge the current level of readiness to execute strategy. Use can be made of the strategy-focused organisation best practice survey.

Recommendation 4 – To align business and IT strategies, communication needs to take place.

Business not understanding IT and IT not understanding the business is still prevalent at PRASA. The parties need to engage at the project level whereby IT responds to the business requirements of the business. This can be done by both the process owner (business) and IT jointly participating in projects.

A further aim was to propose a guideline to manage alignment between business and IT strategies with the intention of overcoming the fragmented and dysfunctional institutional arrangements.

Recommendation 5

The strategic business value of IT needs to be recognised by the organisation. Key to this alignment is for the enterprise architecture to be implemented. This initiative would allow the business to standardise, collaborate and integrate on its key processes and manage emerging technologies.

Recommendation 6

Another important factor is the role IT governance can play in assisting with IT budgetary controls, policies and procedures compliance and IT investment management. It is recommended that PRASA consider deploying an IT governance strategy using frameworks such as ITIL, COBIT, CMMI and others.

Recommendation 7

The role of the Chief Information Officer needs to be elevated to reporting to the CEO to contribute to key strategic IT alignment decisions.

Summary of recommendations

The aim of this research was to understand why the misalignment between business and IT strategies exists at PRASA. A further aim was to propose a guideline to manage alignment between business and IT strategies with the intention of overcoming the fragmented and dysfunctional institutional arrangements. To address resolving the research problem three theoretical models were used. The strategic alignment model was used to ascertain the strategic perspective of PRASA as well as to identify the external strategic fit and internal functional integration of an organisation. The second model used was the strategic alignment maturity model. This model was used to identify the alignment maturity of the business/IT strategies. The final model used was the balanced scorecard. This model was used to identify the alignment maturity of the business/IT strategies. The final model used was the balanced scorecard. Alignment is one of the best practices recommended by the balanced scorecard, and it recommends aligning all to the strategy of the company.

The research finding concluded that PRASA had the strategic execution alignment perspective – whereby business dictates the IT strategy. The overall strategic alignment maturity of the organisation was found to be in initial process. The balanced scorecard methodology was known by all, yet few knew what the performance measures for the organisation was for the year. The triangulated conclusion was that strategic alignment between business and IT was a problem at PRASA. The recommendation was that the organisation conducts three surveys firstly to identify its strategic choice, secondly to identify the strategic alignment maturity and lastly to do a balanced scorecard best practice survey.

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7 APPENDICES

7.1 APPENDIX 1: LETTER TO RESPONDENTS AND CONFIDENTIALITY AGREEMENT

Letter to respondents				
File Ref	DOCS_MHQ/KM/IM/BUS_MGT/STRAT_MGT/RESEARCH			
Creation Date	2010-01-14		Last Edit Date	2010-01-14
Doc No. & Version	81780-v1	Author	LCONSTANCE	Page 1 of 1

2010/01/14

Dear Colleague

Mr. LDW Constance: Student 209230371

RE : PARTICIPATION IN RESEARCH PROJECT

I am enrolled for the Master of Information Technology at the Cape Peninsula University of Technology. I require your assistance in my research project and will appreciate it if you would participate in an unstructured interview.

The topic for my research is:

Alignment between Business and IT strategies: A Case study status at a Western Cape transport organisation

The aim of this research is to understand to what extent the alignment gap between Business and IT strategies exists, at Metrorail.

The research will be an interpretive case study meaning the interview will attempt to discover the underlying phenomena as regards the alignment between Business and IT.

Studies have shown that alignment improves performance and competitive advantage of an organisation.

The intention of the research is to gauge the level of alignment between Business and IT at Metrorail.

If you agree to the interview, confidentiality and anonymity will be assured.

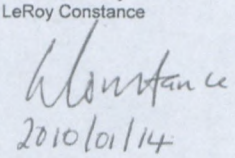
The interview would be between 45 minutes and 1 hour and will take place in January and February of 2010

Should you agree you may confirm via email to cconstance@prasa.com.

Should you require any further details or wish to discuss any matter related to the research, please do not hesitate to contact me directly at cconstance@prasa.com

Thank you, in advance, for your valuable contribution and the courtesy of your assistance.

Yours Faithfully
LeRoy Constance



2010/01/14

CONFIDENTIALITY AGREEMENT

- for the purpose of conducting research in the PRASA environment, or using Company information for research purposes

I, the undersigned

1. herewith undertake that all information disclosed or submitted, either orally, in writing or in other tangible or intangible form by PRASA, (its subsidiaries, business units, its employees agents and/or consultants) to me, or made available to me, or details of PRASA's business or interest of which I may become aware of in respect of the research being done by myself for study purposes at ..C.P.U.T..... (University/~~College~~), to keep confidential and not to divulge to anyone either privately or publicly for which PRASA did not give written consent;
2. guarantee that I will apply the information, detail or knowledge in **clause 1** only for the purpose of my academic research;
3. indemnify PRASA against any claims that may be instituted against it, amounts that may be claimed or losses that PRASA may suffer in consequence of a violation by me of any provision included in this agreement;
4. agree that the provisions of this agreement binds me to PRASA, even if I cease to be a student, employee, representative or advisor of the ....C.P.U.T..... (University/~~College~~), depending as the case may be after ceasing to be such a person.
5. shall immediately disclose in writing all new information in my possession or under my care relating to the research, provided that such new information must have been developed during the course of the research relating to this agreement.
6. agree that PRASA will have a final say on whether my final work gets published, either in journals, university libraries or any arena where such work may be accessed either electronically or physically. I further accept that PRASA reserves the rights to put limitations on which parts of my work may be published, either in full or in sections. This clause is not applicable to the information that is in the public domain, and/or published in the Annual Reports.

CPUT - CAPE PENINSULA UNIVERSITY OF TECHNOLOGY

Cape Peninsula
University of Technology

24 August 2009

TO WHOM IT MAY CONCERN

This letter serves to confirm that Mr. L Constance is a registered MTech: Information Technology student at the Faculty of Informatics and Design.

His registration detail is as follows:

Candidate: Constance, Mr Leroy David William
Student number: 209230371
Title: Alignment between business and information technology strategies: a case study at a transportation organisation
Supervisor: Dr AC de la Harpe.

His research proposal has been approved by this university's Higher Degrees Committee on 19 August 2009.

If you have any further queries, please contact Dr Retha de la Harpe on 021 469 1044 or e-mail at delaharper@cput.ac.za.

Sincerely

P. van Brakel

Prof PA van Brakel
HOD: Research Support Unit
Faculty of Informatics and Design

021 469 1015

7.2 APPENDIX 2: PERFORMANCE AGAINST OBJECTIVES

PERFORMANCE AGAINST OBJECTIVES

Optimising Asset Value

1.1 Rolling Stock

Measure	Target	Actual	Variance	Analysis and comment:
General Overhaul (GO) and Upgraded Coaches: Accelerated Rolling Stock Programme	700	709	+1.3%	This was achieved at a cost of 52.7% more than the budgeted R1.5 billion; a success that signals the crisis of 2006/07 and 2007/08, in terms of poor reliability and availability of rolling stock, is being overcome. It also means that PRASA is on track to eliminate the historical backlogs in the General Overhaul (GO) and Upgrades for Rolling Stock. It's expected that Rolling Stock will soon be back to the normal nine year GO cycle instead of the present 12 year cycle. The acceleration of production on the 10M4, upgrades by Union Carriage and Wagon, have resulted in the release of 20 trailer coaches that have been issued with service worthy certificates. These are now matched on the operational side with motor coaches resulting in complete modules. At Transnet Rail Engineering (TRE) Koedoespoort, a similar acceleration has taken place, with 18 trailer coaches completed. The main reason for the over production of trailer coaches at TRE was due to the order from the KZN region (ratio between trailers and motors not as required) and the second Business Express, which had an influence on the motor coach production line.
New Rolling Stock Sets	0	0		PRASA has developed the business case for the replacement of its current fleet, which is awaiting government approval.

1.2 Infrastructure

Measure	Target	Actual	Variance	Analysis and comment
Signals: CTC Wits (Gauteng Nerve Centre)	Mar 2011			The strategy to upgrade the signalling system – the National Signalling Master plan - has been revised beyond Metrorail Gauteng Region to include key strategic corridors nationwide. A Request for Proposal has been issued with a view to appointing a suitable, qualified bidder to provide a turnkey solution for investigation, design and construction of buildings, systems and related projects. The tender deadline was extended to 30 June 2009 due to the complexity and magnitude of the project, as well as its impact on the operations over the long term.
Other signal projects on A Corridors: Projects completed	4	3	1 project not completed.	The 'logger, routing and train describer system' on Mabopane, Hercules and DeWildt panels were completed, as well as the conceptual design to improve the Durban to KwaMashu service. The signal power supply system at Olifantfontein was also successfully upgraded to a UPS system. The project to replace the CS90 remote control system and install a GSM/GPRS backup communication system on Midway-Kliptown-Nancefield-Orlando is expected to be completed in September 2009.
Bridges and Structure Projects on A corridors: Projects completed	4	5	1 additional project completed (B corridor).	Additional footbridges at Charlottedale and Gledhow in KwaZulu-Natal were completed during the year. Four footbridges were completed in the Eastern Cape.
Electrical Projects on A Corridors: Projects completed	6	8	2 additional projects completed.	Four projects to replace foundations, structures and small part steelworks were completed in Cape Town, Durban (two projects) and Tshwane. Three substation refurbishment projects were completed in Cape Town, Wits and KwaZulu-Natal. A project to replace fibreglass structures with concrete masts was also completed in KwaZulu-Natal.
Perway projects on A corridors: Projects completed	11	8	3 projects not completed	In Tshwane two turnout replacements, a 1:9 and a 1:12 on concrete sleepers, as well as a replacement of a 1:7 diamond crossing were completed. In KwaZulu-Natal a turnout of 1:12 on

Measure	Target	Actual	Variance	Analysis and comment
				concrete and block joints were replaced, as well as station fencing at Scottburgh and Tembalihle stations completed. In addition, sharp curves in Tshwane were improved by continuous welding. Two projects were delayed due to internal approval processes and a further one was delayed due to difficulties in getting line occupation.
Telecommunicati on projects: Projects completed	2	1	1 project not completed	The project in KwaZulu-Natal to replace trunk radios was successfully completed. The trunk radio replacement in Wits is 85% complete due to supplier difficulties in obtaining trunk radios.
Station and Facilities projects: Projects completed	0	0		
ERP System – Completion of implementation of the Finance, HR and Procurements modules.	Mar. 2009	Planned Sept. 2009	Delayed	The project is in the blue-print finalisation stage. The implementation date for Phase 1 – the roll-out of the core HR, Finance and Procurement modules - is September 2009.

1.3 New Extensions

Measure	Target	Actual	Variance	Analysis and comment
Khayelitsha Extension completion	Sept. 2008	May 2009	Project delayed	The infrastructure construction, in terms of laying of the track, signalling, electrical, traction substation and all works within the rail reserve were completed, as well as the building of the Oscar Mpheta Road over rail bridge. The fencing is not yet complete as it was to be commissioned only once the full connectivity was established. The infrastructure component of the project was due for completion in time for the railway line to be operational from mid 2009. Rail Safety Regulator tests were conducted in June 2009 and a limited service was introduced in mid June 2009. The City of Cape Town will ensure that proper access is provided at Kuyasa station. The major challenge to secure firm commitments of power supply has been taken up with ESKOM. The supply of traction electricity will be vital to increasing the capacity of the existing line. In the interim, PRASA has arranged to obtain power from the Nolungile substation, which is approximately 9km from Kuyasa Station. It is believed that this arrangement will work as a

Measure	Target	Actual	Variance	Analysis and comment
				temporary measure, provided that there is no increase in the number of trains on the Khayelitsha line.
Cape Town International Airport Link Milestones	Mar. 2010	On track; minor problems	Delay with appointment of transaction advisors.	The main deliverables this year were to define the design and construction contract and to find a funding partner. The technical feasibility, environmental assessment and detailed implementation programme have been completed. Negotiations with bidders have been approved by the FCP committee. Transaction advisors are due to be concluded during the 2009/10 financial year.
Bridge City Milestones	Mar. 2011	On track		The main deliverables for 2008/09 were the construction of the concrete box, the detailed design of the station as well as the Rail Link. The design plans have been completed. A MOA has also been concluded with Crowie Projects for the construction of the station and the shopping area. Written confirmation of the Environmental Authorisation for the station construction is still awaited.

2 Investing in Human Capital

Measure	Target	Actual	Variance	Analysis and comment
Internships	320	886	+277%	Due to the security challenges faced by the business, more than 200 learners were engaged nationally to complete the requirements of security learnerships. This will help PRASA in its preparation for the 2010 FIFA World Cup™ and also ensure that security personnel have a sense of ownership within the value chain. A number of technical and engineering training facilities have been established on the following locations: • **Gauteng** – A Rolling Stock apprentice school is being set up and will be operational in 2009/2010. 23 electrical apprentices are being trained by Transnet. • **Durban** – the technical training for Infrastructure has been accredited and had 8 signalling trainees and 10 Electrical Fitter trainees. Rolling stock training is done by Transnet. • **Western Cape** – a training facility for Rolling Stock has been accredited that uses facilitators from Transnet.
Employee training spend as percentage of personnel costs	2.5%	2.22%	-11.2%	PRASA spent over 4% of staff costs on training (including all training related costs) and 2.22% on direct training, excluding TETA refunds against a target of 2.5%.
Reduced number of resignations	-5%	-27%	+22%	We achieved good levels of staff retention with resignations of 3% against a projected rate of 4%. The Draft Retention Scheme and Integrated Strategy documents are in the process of being finalised. In addition, a total talent management process has been initiated for managerial skills and junior staff.
Employee Satisfaction Index (Survey)	80%	45%	-35%	The target was set without a baseline in place. The first study in 2008/09 revealed low levels of employee satisfaction. PRASA has embarked on an Employee Engagement Survey to better ascertain employee morale.
EE achievement of targets	92% of target to	28.4%	95% of target females in	PRASA continues to achieve high targets in employment equity, having surpassed a Gender

Measure	Target	Actual	Variance	Analysis and comment
	be achieved		Management	Equity target of 30.7% by 0.9% as well as a Race Equity at Managerial Level target of 69.2% by 4.7%. However, challenges persist with Gender Equity at managerial levels at 28.42% against a target of 29.7%.
		31.6%	+0.9% more Females in lower grades	
		73.9%	+4.7% more black people in Management	
Disabling Injury Frequency Rate	1.5	0.9	-40%	The performance showed an excellent overall improvement against the target of 40%. The rate of injuries is under 1 per 200 000 hours, i.e. down 18% on the 2007/08 figures.

3 Corporate Governance

Measure	Target	Actual	Variance	Analysis and comment
Audit Findings (Auditor General – year-end)	No matters affecting the audit report	1		The Auditors raised a matter of emphasis regarding late capitalisations on Rolling Stock.
Percentage of spending - BBBEE compliance companies	60%	60.6%	+0.6 % above target	This achievement was made in the context that PRASA allowed companies in certain instances to supply goods and services without fulfilling the equity ownership requirement of the BBBEE guidelines. The 60.6% percentage spend can be broken down as follows: Head Office 51.1%; Wits 59.9%; Tshwane 63.6%; Cape Town 63.3%; Durban 72.1 and East London 54.8%. The total discretionary spend for the year was R989 million (Capex and Opex, excluding personnel costs, energy, etc.), while BBBEE spend was R597 million.
Capex Programme Spending	5% variance	35% over spent	30% variance	The over-expenditure is due to the increased costs of delivering the Accelerated Rolling Stock Programme, Station Development Programme and 2010 FIFA World Cup Projects. Notwithstanding provisions of the PFMA, a strategic decision was made not to cut down on the capital expenditure due to the special circumstances and challenges facing commuter rail. Given its 'knife-edge' status, it was believed that a reduction in capital expenditure would have serious negative consequences. In anticipation of this over-expenditure, an application for additional funding was made to the Department of Transport and National Treasury in

Measure	Target	Actual	Variance	Analysis and comment
				June 2008. The Memorandum motivated for additional funding for the above programmes. In the beginning of the 2008/09 financial year, it was established that there was a budgetary shortfall of R1 042,4 million on the Accelerated Rolling Stock Programme. Forecasts showed that this programme would exceed the R1.5 billion budget from November 2008. As envisaged, material costs increased dramatically in the last quarter of 2008. PRASA had to make provision for 11.94% inflationary adjustment in line with SEIFSA rates for the 2008/09 financial year. The price of copper alone increased by 45.9%.
2010 FIFA World Cup Programme Spending	1% variance	170.5% variance on allocation 2008/09	169.5% above target	With regards to preparations for the 2010 FIFA World Cup, PRASA embarked on a turnkey approach to completing the projects. In a number of instances the budgeted costs were exceeded by the lowest acceptable tenders and additional funding was required to complete these projects on time. 98.7% or R712 million of the R721,74 million allocated from 2006/07 till the end of March 2009 has been spent.
Expenditure Management	5% variance	18.4% over spent	13.4% above target	PRASA operated under difficult economic trading conditions in the year under review. Although the economic downturn did not have a noticeable impact on income, it had a huge negative impact on expenditure. Despite cost containment measures, increases in labour, energy, locomotive hire tariffs and other input costs impacted negatively on the bottom line. The operating expenditure increased to R5,21 billion including finance costs, due mainly to increases in labour, energy, locomotive hire tariffs, auxiliary transport and other input costs.

3.1 Customer Focused Improvements

Measure	Target	Actual	Variance	Analysis and comment
Reliability: Trains on time				Punctuality dropped to lows of 85.4 % in February 2009, significantly below the 90 % benchmark. Even though Metrorail has since recovered to 87.4%, this decline negatively affected the year's performance. Cancellations for the period averaged 1.71 %.
A Corridors	90%	88%	-2% below target	
B Corridors	88%	88,9%	+0.9% above target	
C Corridors	85%	87.9%	+2.9% above	

Measure	Target	Actual	Variance	Analysis and comment
			target	Whilst both the Eastern and Western Cape continued to perform well, KwaZulu-Natal and Gauteng fell below the target. The main contributors to the delays and cancellations remain: ageing rolling stock and signals, theft and vandalism-related problems. Signals in Gauteng South were affected by inclement weather which affected mostly the track circuits. In Gauteng North, rolling stock-related problems were the main contributors. Several HT burnouts at the maintenance depot affected train set availability and led to many train cancellations. An investigation highlighted several process deficiencies as well as the urgent need to upgrade electrical protection for the sets. This is currently receiving attention. As part of efforts to address capacity constraints at Wolmerton depot, Metrorail has transferred the maintenance of the Pretoria - Johannesburg sets from Gauteng North to Gauteng South. On the positive side, there have been significant improvements in performance in the Western Cape, due in large part to interventions in rolling stock maintenance. The structured approach and analytical methodology used is being rolled out to other regions as part of the Preventative Maintenance Project. It is clear that focused attention is required to improve rolling stock availability, particularly motor coaches, from the GOs and upgrade program. Another issue is the high number of warranty-related failures of the upgraded rolling stock, particularly the 10M5 sets. Asset Management is working closely with the regions to attend to this problem.
Predictability: Trains Cancelled				
A Corridors	1.5%	1.8%	0.3% above target	
B Corridors	1.7%	1.23%	0.47% below target	
C Corridors	2%	0.94%	1.06% below target	
Safety and Security				
Reduction of accidents per million train kilometres.	20% reduction	26.2% increase	26.2% increase	Two major accidents occurred in Gauteng South. Inquiries have been completed and the recommendations are being implemented. The Board of Inquiry has largely confirmed the findings of the preliminary investigation. These accidents as well as a general increase in the number of derailments, Signals Passed at Danger (SPAD) and other operating irregularities, has raised concern about the efficacy of our safety management systems.

Measure	Target	Actual	Variance	Analysis and comment
				It has been found that more than 80% of these incidents were due to human error. A Train Crew Profiling System has been introduced to address safety issues. It allows for the categorisation of train crew into four categories with a point system that determines the level of monitoring and support required for each member. Metrorail hope this system will increase supervision and overall safety.
Reduce fatalities per million passenger trips	20% reduction	5.4% increase	5.4%	Increases were experienced across all regions.
Reduce injuries per million passenger trips	20% reduction	2.8% increase	2.8%	Increases were experienced across all regions with the exception of Gauteng South which showed a 3% decline year-on-year.
Reduced Crime Index (serious crime incidents per 100 000 passenger trips)	0,400	0,332	17% reduction on target	The security situation within commuter rail has improved significantly. There were many challenges in the KwaZulu-Natal region at the beginning of the financial year, but these have since stabilised thanks to interventions by the KZN region, supported by Head Office Protection Services and SAPS Railway Police.
Metro Plus product passenger trips	6% increase	24% increase	18% above target	Metro Plus trips, including Business Express trips increased from 28,88 million to 35,78 million trips.
Customer Satisfaction index (Survey)				
A Corridors	75%	73%	2% below target	Customer satisfaction did not meet the 75% targets in A Corridors. Low satisfaction areas across all corridors include: overcrowding, functionality of heaters or ventilation and punctuality of trains. Queues at ticket offices are the fourth area of low satisfaction on A and C corridors, whilst B corridor respondents cited perceived poor deployment of the Railway Police as the fourth area of low satisfaction. Station operations and passenger information (communication) were the areas of highest satisfaction across all corridors.
B Corridors	73%	73%	On target	
C Corridors	71%	72%	1% above target	

3.2 Increased patronage

Measure	Target	Actual	Variance	Analysis and comment
Passenger trips increase	6% increase	9.2% increase	3.2% above target	We overachieved on the target of 627.3 million passenger trips by delivering 646.27 million passenger trips compared with the previous year's 591.8 million . This is due to an increase in the number of trains being scheduled and a clear indication of the success of the Stabilisation efforts and the Accelerated Rolling Stock Programme's contribution to improving rail service delivery.
Subsidy per passenger kilometre	R0.14	R0.151	7.9%	The allocated subsidy divided by the targeted increased passenger trips (6% increase) was R0.155 per passenger kilometre. Due to increased passenger trips of 3.2% above target, the measure improved from R0.155 to R0.151.

3.3 Boost Revenue

Measure	Target	Actual	Variance	Analysis and comment
Fare Revenue	7% increase (Inclusive of a 5% fare increase)	12.1% increase without a fare increase	5.1% above target	The positive income performance trend of the past financial years continued into March 2009 resulting in the business ending the year on a very positive note. We exceeded our annual budget target by R83,73 million, and last year's actual figures in the order of R144,71 million. The measures implemented as part of the Metrorail revenue management efforts continue to bear fruit. These include: fare evasion reduction through regular ticket action on all lines, increasing the resourcing of ticket offices in growth areas and fraud control through honesty checks on customer interfacing staff. The fact that Metrorail has not increased fares in four years, against a backdrop of petrol price increases that impacted on bus and taxi fares, has also contributed to both passenger and revenue growth . However, Metrorail noted a decline in the month-on-month variations since December 2008, perhaps an indicator that the growth seen in the last few years may be starting to peak.

Measure	Target	Actual	Variance	Analysis and comment
Fare evasion (percentage of passengers without valid tickets)	<10%	9%		Fare evasion figures were updated with the latest results from the Durban and Eastern Cape censuses. The 95% confidence interval for fare evasion is that fare evasion may be between 0% and 18%. The estimated fare evasion at the midpoint of the 95% confidence level increased marginally from 8.9% to 9%.

4 Intersite

4.1 Customer Focused Improvements

Measure	Target	Actual	Variance	Analysis and comment
Station improvements completed	40	44	10% above target	The target of 40 stations was met, however, Intersite had committed to deliver 105 stations versus the actual 40 required. The delays were due to a huge tender response in the Western Cape and a hold-up with the issue of Site Access Permits in Northern Gauteng. The process for site access has been reviewed with Metrorail and PRASA. An additional 11 stations were completed by the end of April 2009, with 23 scheduled for completion by end of May 2009 and a further 27 stations by end of June 2009.

4.2 Exploit Rail Property Assets

Measure	Target	Actual	Variance	Analysis and comment
Mabopane Development				
Air Rights Slab	Feb. 2009			Project cancelled
Traders Market	Mar. 2009	Delayed		The temporary traders market was completed in June 2008 and the relocation of the traders only in October 2008. Construction of the new traders market was delayed as result of the liquidation of the contractor.
Pedestrian Bridge	May 2009	Delayed		The bridge tender was approved by the Intersite Board in November 2008. The planned start date for construction of February 2009 has been heavily delayed due to SDP approval and confirmation of funding. All design issues have been resolved, the risk assessment and safety plan have been completed, site establishment has been identified and construction methodology has been submitted by the contractor. Design meetings are progressing well and the team is busy with the PIP process for the entire Mabopane Development. The expected construction period is 15 months due to occupations required and the phased nature of the project.
Commercial Offices	Oct. 2009			Project cancelled.
Pretoria station	Dec. 2010			Project cancelled.
Park Station	Dec. 2009			Project cancelled.
Berea Road – Feasibility study	July 2008	Jul 2008		Feasibility study completed.
Umgeni Business Park Development	Sept. 2011			Project cancelled.
Scottburgh Residential Development	Oct. 2010	Delayed		The tender phase for the project was delayed as a result of the Environmental Impact Assessment that is expected to take 12 months.
Cape Town Station				
Cnr Strand and Adderley Streets	Mar. 2010			Project cancelled.
2010 FIFA World Cup	April 2010			All construction contracts for enabling works have been awarded and construction started in September 2008. The main station refurbishment works are in progress. The revised completion date as at end of April 2009 was February 2010.

5 Shosholoza Meyl

Whilst PRASA, formerly the SARCC, did not take ownership and control of Shosholoza Meyl during the year under review, management has kept its focus on and monitored the performance of Shosholoza Meyl in anticipation of its incorporation into the business. The performance targets below were originally included in the PRASA's 2008/09 Business Plan in anticipation of its incorporation, but due to failure by Transnet and PRASA

to conclude the Sale of Business Agreement during the financial year, these performance indicators are included for consistency purposes only and do not reflect activities owned and managed by PRASA.

5.1 Cost Containment

Measure	Target	Actual	Variance	Analysis and comment:
Expenditure Management	5% Variance	19% under spent	14% below target	The variance in expenditure was due to unused budget for maintenance of locomotives provided for in the income statement in anticipation of the locomotives being transferred from Transnet Freight Rail during 2008/09 financial year. Haulage costs which were budgeted for at market related rates while actual charged was 2007/08 rates increased by 17% as per the draft haulage agreement. This resulted in a lesser actual charge against higher budget.
Revenue	R378m	R411,12m	8.8% above budget	The tourist/ sleeper class exceeded budget expectations. The R22 million income from unbudgeted On-Board Services contributed most to the additional income.
Economy Class	R311,4m	R302,331m	2.9% below budget	
Tourist / Sleeper Class	R40,8m	R43,196m	5.9% above budget	
Premier Class	R25,8m	R17,132m	33.6% below budget	
Cost Coverage	23%	31%	Improvement of 8%	Lower expenditure and higher revenue contributed to the higher cost coverage.
Economy Class	26%			It was not possible to determine cost coverage per product line during the year.
Tourist / Sleeper Class	18%			
Premier Class	54%			
Capex Programme Management	5% variance	-51% variance	Under spent by 51%	Under Transnet, Shosholoza Meyl only spent R3,5 million of the R7,2 million allocated, the reasons for underperformance are as follows: • R2,7m was allocated for the purchase of Capex. The portable ticket machines, after which the decision was made to lease the machines instead. As a result, the capex funds could not be used due to the change in transaction type. • The access control projects were not realised as anticipated. The only project regarded as crucial was in Kaapmuiden, which was concluded at R125 000 although provision was made for R128 000 since the project was already in its completion stage.

5.2 Customer Focused Improvements

Measure	Target	Actual	Variance	Analysis and comment
Trains on time: Arrivals	50%	32%	18% lower than targeted	Major reasons for non-performance were locomotive failures, crossings with Metrorail and speed restrictions. The following measures have been put in place to improve train performance: • Revising yard processes • Reducing delays caused by Shosholoza Meyl • Interaction with parties contributing to delays i.e. Metrorail etc. • Interface agreement with Transnet to have penalty regime to ensure Transnet/ TRE speed up sorting out the delays caused by their inefficiencies • Transfer of locomotives to Shosholoza Meyl will improve performance
Security: Reduce safety incidents related to passengers	5% reduction			Safety information provided was on the employee related DIFR-index. Only two incidents of serious crime occurred in 2008/09.

7.3 APPENDIX 3: RESPONSE FROM INTERVIEWEES

7.3.1 Response to question 2

Respondent	SAM
Bus Man	
A RW	Probably at the cost centre level.
b	
c	
d	
IT Man	
A MJ	
B LW	Currently IT is unfortunately a support function to the business, full potential not realised .
C MS	ICT is a currently a cost centre support. Whenever we submit projects business reduce funds IT could have provide some solutions for, e.g., sms system. Should build capacity to do business analysis.
D VN	Only time we hear of IT is when network is down. IT immaturity.
Business plan	Mention is made of IT as a shared service. IT tasks are development of IT governance structure, knowledge management initiative, integrated ticketing system, IT controls and security and rollout of the new ERP system. Except for knowledge management initiative this places the company firmly in the technology potential perspective.
Annual plan	No mention is made of aligning business with IT.

7.3.2 Response to question 3:

Table 29 Communication perspective from SAMM

Stakeholder	Communication
Bus Man	
A RW	Business does not understand IT, the business seriously underestimates the role IT can play. ICT does not understand the business, their strategies do not always support what we want to achieve as a business.
b	
c	
d	
IT Man	
A MJ	IT speaks to the business in terms of "IT speak". IT sometimes does not understand what the business requires.
B LW	Business does not understand the intricacies of IT, e.g., writing code for an application. Depending on the orientation of the IT team, IT students steer away from accounting type subjects. Remain in the technical realm. There is enough understanding on the type of technologies required by the business. Certainly appreciation of IT with the bulk of executive.
C MS	Don't experience that communication between business and IT. Customer requirements are developed by ICT without consultation. Business does not understand IT, systems and timeframes to deliver successful systems. IT doesn't understand the business.
D VN	Business doesn't understand IT. Remove the barrier by going to the business. Try to understand business to try and meet their objectives.
Business plan	In this plan communication is no longer a value. Very little mention of communication in the business plan.
Annual report	Communication is one the company's values. Thereafter no more reference made to this value.

Table 30 Measurement of value perspective from SAMM

Stakeholder	Measurement of value
Bus Man	
A RW	No do not share common values. Operational culture and corporate office culture.
b	
c	
d	
IT Man	
A MJ	PRASA rolling out new values. Most employees have a vague idea of what the business values are.
B LW	Coming to point where we have to adopt the values of PRASA more vigorously. Values critical for us, helping to control behaviour.
C MS	There is a certain level of values.
D VN	Well, if the focus was on the values this would be reflected in the alignment - currently, do not see eye to eye, which leads to misalignment.
Business plan	The values that will guide PRASA, which will underpin the performance ethos of the organisation derived from and are guided by the fundamental and progressive human values of the Constitution of the Republic of South Africa: • Service excellence • Participation • Integrity • Fairness • Innovation The values are only identified but never discussed. These values have changed from the previous year.
Annual report	The values that will guide PRASA and underpin the performance ethos of the organisation are guided by the fundamental, progressive humanitarian values of South Africa's constitution: • Participation

	• Communication • Honesty and integrity • Fairness • Innovation The values are different to the values in the business plan as service excellence is not mentioned - instead, communication is introduced. The chairman talks about to creating one organisation with a shared vision and set of values.

Table 31 Governance perspective from SAMM

Stakeholders	Governance
Bus Man	
A RW	All legislation, e.g., OHSAS, NIMA, legal succession act. Have a risk matrix to reduce risk.
b	
c	
d	
IT Man	
A MJ	Vague whether business embraces governance. IT embraces the spirit of the law, not the letter of the law.
B LW	Governance culture certainly there, awareness about governance needs to be strengthened. ICT did not get clean audit. Tone set at top of organisation. IT has not had a great track record when it comes to governance.
C MS	Finance side I believe business reasonably compliant. Some audit findings but closed off. IT side unfortunately not compliant to several critical requirements, e.g., backups.
D VN	At the corporate it is not clear what the policies and procedures are. Partially they do adhere to it.
Business plan	Excellent mention is made about governance in general in the business plan, with one mention specifically of IT governance which talks about developing an IT governance structure.
Annual plan	There is excellent reference to governance in the annual report. The Auditor-General did not find any significant findings. This is a significant finding and can be attributed to organisations adherence to governance principles.

Table 32 Partnership perspective from SAMM

Stakeholders	Partnership
Bus Man	
A RW	Need to review reason for existence, need to restructure. Deal with IT requirements for operations. Quantify value of IT in fare revenue. Need a bouquet services via SLA.
b	
c	
d	
IT Man	.
A MJ	Business does not view IT as a partner, merely as service provider.
B LW	IT seen as box droppers.
C MS	Better understanding due to total systems failure. I believe that business understands the critical role ICT plays.
D VN	Needs guns and bullets to protect business. Have not embraced IT as a strategic partner.
Business plan	Partnership is well represented in the business plan. The need to recapitalise PRASA as a major player in supporting the delivery of government's socio-economic and transport intentions requires the identification of key strategic partners and investors. Building strategic alliances and strengthening relationships, both nationally and internationally, will assist PRASA in addressing its short-term needs while positioning the organisation for longer-term growth into Southern Africa.
Annual plan	PRASA is expected to play a major role in the development of social and economic infrastructure. The organisation will partner with transport and rail authorities to plan and deliver on rail and other transport infrastructure.

Table 33 Architecture and scope perspective from SAMM

Stakeholders	Architecture and scope
Bus Man	
A RW	Only if they understand what business operations require. Unique systems that rail require. Consultative as regards requirements.
b	
c	
d	
IT Man	
A MJ	New concept within the company, an attempt by IT to align with the business. Positive if done properly.
B LW	Does not have to be a permanent feature. Models like COBIT can quite easily be adopted for the organisation. Architecture happens by default and is dictated by business model.
C MS	No enterprise architecture in place. Value can be obtained by interfacing and communicating effectively if this was in place.
D VN	EA most important thing. Cannot be driver and navigator.
Business plan	One mention of architecture - internally, the integration of systems across urban and regional services requires a single enterprise platform and architecture.
Annual report	No mention is made of architecture and scope.

Table 34 Skills perspective from SAMM

Stakeholders	Skills
Bus Man	
A RW	No issue of experience, unique environment, no accredited training.
b	
c	
d	
IT Man	
A MJ	Level of technical competence might not be sufficient to carry the business forward. Certain functions in IT are missing, for example, programme management.

B LW	ICT dept has really gone out on a limb for a while, resources largely look at operational aspects of the business. Supports grow MIS and Knowledge Management in the region, came about from planned and aborted structures.
C MS	Do not have skills to become a business value partner, no business analysis, senior engineers, programmer analysts. Do not have sufficient skills to operate as normal.
D VN	Have minimal skills. Need people who understand the technical level of IT be competent. More due to lack of planning than skills. Not catering for baby boomers.
Business plan	The following skills are identified as critical - passenger rail in South Africa faces many challenges as a result of a long history of inadequate investment in rail rolling stock, infrastructure and operations as well as the loss of appropriate managerial and technical (engineering) skills within the industry. The shortage of such critical skills has a direct negative impact on the delivery of services. The business plan addresses ways to overcome this problem.
Annual report	The corporation aims to create capacity as well as retain skills. Focus in this area was to prepare for the operations and infrastructure maintenance challenges that needed to be addressed.

7.3.3 Response to question 4:

Table 35 Mobilise change through executive leadership

Stakeholders	Mobilise change through executive leadership.
Bus Man	
a	Important to do
B RW	Critical, continuous, ongoing, recession caught us off guard.
c	
d	
IT Man	
A MJ	The company is embarking on a change management philosophy.
B LW	Need to create a climate for change.
C MS	Proper change management required to communicate to a wide audience.
D VN	Executives do not understand the business strategy, no project implementation.
Bus plan	
Annual plan	

Table 36 Translate strategy into operational terms

Stakeholder	Translate strategy into operational terms.
Bus Man	
a	Some element of service performance pursued.
b	Not adequately addressed.
c	
d	
IT Man	
A MJ	Operations continue as usual. No ICT BSC.
B LW	Strategy translated into operational plan. Stopped at projects.
C MS	Has not been done at PRASA.
D VN	No budgeting process capital for infra and rolling stock.
Bus plan	
Annual plan	

Table 37 Align the organisation to the strategy

Stakeholders	Align the organisation to the strategy.
Bus Man	
a	No alignment.
b	No problem moving to different strategies.
c	
d	
IT Man	
A MJ	Business unit's strategy not aligned to PRASA strategy, ICT not at present.
b	Current funding not allowing execution.
C MS	Not aligned.
d	Not cascaded.
Bus plan	
Annual plan	

Table 38 Motivate to make strategy everyone's job

Stakeholders	Motivate to make strategy everyone's job.
Bus Man	
a	No misconception of strategy and production long term.
b	Not properly communicated.
c	
d	

IT Man	
A MJ	ICT have vague idea.
b	Effort from top management to create awareness of strategy.
c	No awareness of strategy.
d	It is a paper exercise.
Bus plan	
Annual plan	

Table 39 Govern to make strategy a continual process

Stakeholders	Govern to make strategy a continual process.
Bus Man	
a	Programmed process for budget review.
b	Rail plan is for 20 years, yet budget cycles are one year.
c	
d	
IT Man	
a	Sometimes the organisation not prepared to bear cost to mitigate risk.
b	Not implementing strategies, need strategy execution plan.
C MS	Yes, have governance, financial and HR processes.
d	ICT needs to be a continual process.
Bus plan	
Annual plan	

Table 40 Stakeholder response to research question 5

Stakeholders	Why is the extent of alignment between business and IT strategies important?
Bus Man	
A RW	Integration of customer experience must be seamless. IT needs to fit in with technology to support the strategy. Labour intensive, currently ICT can help here.
b	
c	
d	
IT Man	
A MJ	Currently there is misalignment between business and IT strategies as the business lacks confidence in IT.

B LW	Current situation - I don't think there is good alignment. Very much dependent on culture of organisation.
C MS	The importance of IT not recognised, performance scorecard does not reflect IT contribution, only 2% of company scorecard.
D VN	IT budgets not aligned to the business. ICT budget needs to be divided into two strategic and operational budgets.
Business plan	There is extensive mention made of alignment in general but not specifically between the business and IT. The alignment between the two might be implied but is not explicit. The business plan states that the complexity of simultaneous processes poses different challenges on a number of different levels. At a strategic level, the plethora of business processes that require review, alignment and amendment to ensure that the mandate can be affected, is identified as a challenge. The critical importance of change management and the role of IT in capturing business processes cannot be overemphasised This is the only mention of IT's involvement.
Annual report	Consolidation of PRASA is a multi-faceted process within which the human resources (HR) department facilitates the appropriate human capital capabilities at all levels within the organisation. The complexities of these simultaneous processes pose various challenges on different levels. At a strategic level there was a plethora of policies, practices and processes that required review, alignment and amendment to ensure that the businesses are supported appropriately.

7.4 APPENDIX 4: BUSINESS PERFORMANCE

BUSINESS PERFORMANCE

	Strategic objective	Measure	Target	Actual	Performance
PRASA	**Optimise Asset Value:**				
	Rolling Stock	GO's and Upgrades	700	709	
		New Rolling Stock – Train sets	0	0	
	Infrastructure Investment	Signals: CTC Wits	Mar-2011		The project is at tendering stage as at year-end
		Other signal projects: A Corridors	4	3	1 project not completed
		Bridges & structures projects: A Corridors	4	5	1 additional project completed (B Corridor)
		Electrical projects: A Corridors	6	8	2 additional projects completed
		Perway projects: A Corridors	11	8	3 projects not completed
		Telecommunications projects: A Corridors	2	1	1 project not completed
		Station and Facilities projects:	0	0	
		New extensions completed: Khayelitsha	Sep-2008	May-2009	Project delayed
		Cape Town International Airport Link Milestones	Mar-2010	On track, minor problems	Delay with appointment of transaction advisors.
		Bridge City Milestones	Mar-2011	On track	
	ERP System	Standardised ERP for HR, Finance & Procurement	Mar-2009		Implementation scheduled for Sep 2009
	Investing in Human Capital	No of internships	320	886	277% over target
		Employee training & development as % of Personnel Costs	2.50%	2.22%	11,2% under target. Reflect only direct training costs
		Reduced no of resignations	Reduce by 5% to 286	Reduce 27% (224)	Exceed target by 22,2%
		Employee Satisfaction Index	80%	45%	Target set without baseline.
		EE achievement of targets - 92% of target to be met	Increase of 2% in Females in Management to 29.7%	28.40%	95% of target met.
			Increase of 2% of Females in Lower Grades to 30.7%	31.60%	Target exceeded by 0.9%
			Increase of 1% in Blacks in Management to 69.2%	73.9%	Target exceeded by 4.7%
		Disabling Injury Frequency Rate	1.5	0.9	Target exceed by 40%.
	Strengthen Corporate Governance	Audit findings(Auditor General -Year-end)	No matters affecting the audit report (AG)	1	1 matter of emphasis
		% of spending to BBBEE Compliant Companies	60%	60.6%	Target exceeded by 0.6%
		Capex Program Spending	5% variance	35% overspent	30% variance with target
		2010 Programme Spending (excluding funds from 2007/08)	1% variance	170.5% overspent	169.5% variance with target
		Expenditure Management	5% variance	18.4% overspent	13.4% variance with target

	Strategic objective	Measure	Target	Actual	Performance
Metrorail	Customer Focused Improvements				
	Reliability: Trains on Time	A Corridors	90%	88%	-2% below target
		B Corridors	88%	88.90%	+0,9% above target
		C Corridors	85%	87.90%	+2,9% above target
	Predictability: Trains Cancelled	A Corridors	1.5%	1.8%	0.3% above target
		B Corridors	1.7%	1.23%	0.47% below target
		C Corridors	2.0%	0.94%	1.06% below target
	Safety & security	Reduction of accidents per million train km	20% reduction to 0.94	26.2% increase to 1.45	46,2% above target
		Reduce fatalities per million passenger trips	20% reduction to 0.27	5.4% increase to 0.35	25.4% above target
		Reduce injuries per million passenger trips	20% reduction to 2.0	2.8% increase to 2.58	22.8% above target
		Reduced Crime Index	0.400	0.322	17% reduction on target
	Metro Plus product	Metro Plus passenger trips on specific corridors and express services	6% increase to 30.6m trips	24% increase to 35.75 m	18% above target
	Customer Satisfaction	Customer Satisfaction Index			
		A Corridors	75%	73%	2% below target
		B Corridors	73%	73%	On target
		C Corridors	71%	72%	1% above target
	Increase patronage	Passenger trips increase	6% increase to 627.3m trips	9.2% increase to 646.27m	3.2% above target
		Subsidy per passenger kilometer	R 0.14	R 0.151	7.9% above target
	Boost Revenue	Fare Revenue (Inclusive of 5% fare increase in September)	7% increase to R1259.5m	12.1% increase to R1340.75m without a fare increase	5.1% above target
		Fare evasion	<10%	9%	At 95% confidence level.
Intersite	Customer Focused Improvements	Station Improvements – Stations completed	40	44	
	Exploit Rail Property Assets	Mabopane Development Air Rights Slab	Feb-2009	Project Cancelled	
		Traders Market	Mar-2009	Project delayed	
		Pedestrian Bridge		Project delayed	
		Commercial Offices		Project Cancelled	
		Pretoria Station		Project Cancelled	
		Park Station		Project Cancelled	
		Berea Road – Feasibility Study	Jul-2009	Completed June 2009	
		Umgeni Business Park Development		Project Cancelled	
		Scottburgh Residential Development	Oct-2010	Project delayed	
		Cape Town Station Strand on Adderley	Mar-2010	Project Cancelled	
		World Cup 2010	Apr-2010	On schedule - completion Dec 2009	

	Strategic objective	Measure	Target 2008/09		PERFORMANCE Qrt 1	Qrt 2	Qrt 3	Qrt 4	Total
PRASA	Optimise Asset Value:								
	Rolling	GO's and	700	Target	119	217	183	181	700
				Actual	90	164	184	271	709
				Status					
		New Rolling	0	Target					0
				Status					
	Infrastructure Investment	Signals: CTC	Mar-2011	Target	The project is at tendering stage as at year-end.				
				Status					
		Other signal projects: A Corridors	4	Target	0	0	0	4	4
				Actual	0	2	0	1	3
				Status					
		Bridges & structures projects: A	4	Target	0	2	2	0	4
				Actual	0	2	0	3	5
				Status					
		Electrical projects: A Corridors	6	Target	2	2	0	2	6
				Actual	2	0	0	6	8
				Status					
		Perway projects: A Corridors	11	Target	0	1	1	9	11
				Actual	0	1	0	7	8
				Status					
		Telecommunications projects: A Corridors	2	Target	0	0	1	1	2
				Actual	0	0	0	1	1
				Status					
		Station and Facilities A Corridors (Upgrades)	0	Target	0	0	0	0	0
				Actual	0	0	0	0	0
				Status					
		New extensions completed: Khayelitsha	Sep-2008	Target		1			1
				Status					0
	ERP System	Standardised ERP for HR, Finance & Procurement	Mar-2009	Target			RFP & Award	Implementation	Implementation scheduled for Sep 2009
				Status					
	Investing in Human Capital	No of internships	320	Target	320	320	320	320	320
				Actual	491	509	684	886	886
				Status					
		Employee training & development as	2.50%	Target	2.50%	2.50%	2.50%	2.50%	2.50%
				Actual	1.1%	2.0%	2.2%	2.6%	2.22%
				Status					
		Reduced no of resignations	Reduce by 5% to 286	Target	72	72	71	71	286
				Actual	71	46	76	31	224
				Status					
		Staff turnover for critical skills (Core Skills)	4% or less	Target	4%	4%	4%	4%	4%
				Actual	1.0%	1.2%	0.9%	0.3%	3%
				Status					

Strategic objective	Measure	Target 2008/09		PERFORMANCE				
				Qrt 1	Qrt 2	Qrt 3	Qrt 4	Total
	Staff turnover for other staff	6% or less	Target	6%	6%	6%	6%	6%
			Actual	2.2%	1.1%	1%	0.3%	3.9%
			Status					
	Employee Satisfaction Index	80%	Target		80%			80%
			Actual		45%			
			Status					
	EE achievement of targets - 92% of target set	Increase of 2% in Females in Management to 29.7%	Target	28.2%	28.7%	29.2%	29.7%	29.7%
			Actual	27.1%	28.3%	28.5%	28.4%	28.4%
			Status					
			Note	The target per business plan approved is 92% of target achieved. 95% of target was achieved.				
		Increase of 2% of Females in Lower Grades to 30.7%	Target	29.2%	29.7%	30.2%	30.7%	30.7%
			Actual	28.9%	31.0%	31.0%	31.6%	31.6%
			Status					
		Increase of 1% in Blacks in Management to 69.2%	Target	68.5%	68.7%	69.0%	69.2%	69.2%
			Actual	69.6%	70.9%	71.3%	73.9%	73.9%
			Status					
	Disabling Injury Frequency Rate	1.5	Target	1.5	1.5	1.5	1.5	1.5
			Actual	1.0	1.3	0.8	0.6	0.9
			Status					
	Strengthen Corporate Governance	Audit findings(Auditor General - Year-	No matters affecting the audit report (AG)	Target				0	0
				Actual					1
				Status					
		% of spending to BBBEE Compliant Companies	60%	Target	60%	60%	60%	60%	60%
				Actual	35%	40%	55.7%	77.8%	60.6%
				Status					
		Capex Program Spending	5% variance	Target	5%	5%	5%	5%	5%
				Actual	-68.6%	28.7%	-12.2%	192%	35.0%
				Status					
		2010 Programme Spending	1% variance (Excludes funds from 0708)	Target	52.5	52.5	52.5	52.5	210
				Actual	41.84	51.14	173.11	302.04	568.13
				Variance	-20.3%	-2.6%	229.7%	475.3%	170.5%
				Status					
		Expenditure Management	5% variance	Target	5%	5%	5%	5%	5%
				Actual	-7.7%	3.10%	10.7%	56.8%	18.4%
				Status					

	Strategic objective	Measure	Target 2008/09		PERFORMANCE				
					Qrt 1	Qrt 2	Qrt 3	Qrt 4	Total
Metrorail	Customer Focused Improvements								
	Reliability: Trains on Time	A Corridors	90%	Target	90%	90%	90%	90%	90%
				Actual	86.4%	87.7%	88.4%	87.3%	88%
				Status					
		B Corridors	88%	Target	88%	88%	88%	88%	88%
				Actual	88.1%	89.5%	89.8%	88.1%	88.9%
				Status					
		C Corridors	85%	Target	85%	85%	85%	85%	85%
				Actual	88.0%	88.3%	87.9%	86.6%	87.9%
				Status					
	Predictability: Trains Cancelled	A Corridors	1.5%	Target	1.5%	1.5%	1.5%	1.5%	1.5%
				Actual	1.82%	1.7%	1.14%	2.5%	1.80%
				Status					
		B Corridors	1.7%	Target	1.7%	1.7%	1.7%	1.7%	1.7%
				Actual	1.23%	1.2%	0.7%	1.6%	1.23%
				Status					
		C Corridors	2.0%	Target	2.0%	2.0%	2.0%	2.0%	2.0%
				Actual	0.76%	1.3%	0.6%	0.9%	0.94%
				Status					
	Safety & security	Reduction of accidents per million train km	20% reduction to 0.94	Target	0.94	0.94	0.94	0.94	0.94
				Actual	2.5	1.26	1.12	0.97	1.45
				Status					
		Reduce fatalities per million passenger trips	20% reduction to 0.27	Target	0.27	0.27	0.27	0.27	0.27
				Actual	0.35	0.32	0.36	0.38	0.35
				Status					
		Reduce injuries per million passenger trips	20% reduction to 2.0	Target	2.0	2.0	2.0	2.0	2.0
				Actual	1.9	2.2	2.3	3.8	2.6
				Status					
		Reduced Crime Index	0.400	Target	0.400	0.400	0.400	0.400	0.400
				Actual	0.362	0.372	0.304	0.315	0.368
				Status					
	Metro Plus product	Metro Plus passenger trips on specific corridors and express services	6% increase to 30.6m trips	Target	7.513	7.575	7.482	8.046	30.616
				Actual	8.795	9.334	8.745	8.877	35.750
				Status					
	Customer Satisfaction	Customer Satisfaction Index							
		A Corridors	75%	Target		75%		75%	75%
				Actual		72%		73%	73%
				Status	All corridors				
		B Corridors	73%	Target		73%		73%	73%
				Actual		72%		73%	73%
				Status	All corridors				
		C Corridors	71%	Target		71%		71%	71%
				Actual		72%		72%	72%
				Status	All corridors				
	Increase patronage	Passenger trips increase	6% increase to 627.3m trips	Target	156.187	160.796	158.601	151.762	627.346
				Actual	156.357	166.815	159.325	163.653	646.273
				Status					
		Subsidy per passenger kilometer	0.14 Should be R0.152	Target	0.14	0.14	0.14	0.14	0.14
				Actual	0.153	0.144	0.150	0.147	0.148
				Status					

	Strategic objective	Measure	Target 2008/09		PERFORMANCE Qrt 1	Qrt 2	Qrt 3	Qrt 4	Total
	Boost Revenue	Fare Revenue (Inclusive of 5% fare increase in September)	7% increase to R1259.5m	Target	301.46	321.35	303.49	333.20	1259.50
				Actual	321.12	339.22	329.85	351.58	1340.75
				Status					
		Fare evasion 95% Confidence level	<10%	Target	<10%			<10%	<10%
				Actual	8.90%			9.00%	9.00%
				Status					
Intersite	Customer Focused Improvements	Station Improvements – Stations completed	40	Target	19	0	0	21	40
				Actual	19	0	0	25	44
				Status					
	Exploit Rail Property Assets	Mabopane Development							
		Air Rights Slab	Feb-09	Target	Project Cancelled				
		Traders Market	Mar-09	Target		Traders relocated			
				Status			Relocation completed		
		Pedestrian Bridge		Target			Board approval	Construction start	
				Status					Construction delayed
		Commercial		Target	Project Cancelled.				
		Pretoria Station		Target	Project Cancelled.				
		Park Station		Target	Project Cancelled.				
		Berea Road – Feasibility Study	Jul-09	Target	Feasibility Completed June 2008				
		Umgeni Business Park		Target	Project Cancelled.				
		Scottburgh Residential	Oct-10	Target	Tender phase delayed due to requirement for EIA that is expected to take 12 months				
		Cape Town Station Strand on Adderley		Target	Project Cancelled				
		World Cup 2010		Target		Construction start			
				Status			Construction started		On schedule - completion Dec 2009