

A phenomenological study in the behavioural patterns of users
in the adaptation of enhanced information system applications:
The case of a South African University

by
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Key Words

Enhanced Information System Applications

Interpretative Phenomenological Analysis

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Disengaged Employees

Student Administration

Knowledge Transfer



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Shukr to ALLAH for granting me the health and wisdom to have attempted and completed this research.

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ABSTRACT

A phenomenological study in the behavioural patterns of users in the adaptation of enhanced information system applications: The case of a South African university.

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In this thesis, the author explores the phenomena of attitudinal behaviour of some users (management and administrative support personnel) in the adaptation of enhanced information system applications (EISAs) during the last decade of the programme lifecycle of the Student Enrolment Management System (SEMS) programme at a South African university, hereinafter referred to as the University.

People develop attitudes toward things in various ways. While direct (lived) experience can be the foundation of permanent attitude formation, both indirect experience and referential input from others are strong influences on both attitude development and changes in personal attitude. The psychological factors that govern attitude are varied. They are documented in the scholarly literature of many fields, and frequently reference the study of people and technology. Research in the use of information systems (IS), however, does not typically aggregate the psychological factors influencing user attitude. To bring together the divergent empirical evidence of user attitude formation, an Interpretative Phenomenological Analysis (IPA) approach is used to formally identify and analyse this evidence. Such analysis can provide a more cohesive understanding of what is known about user attitudes toward

information systems, and can offer an ontological framework for more formalised study of the relationship between people and information system applications (ISAs).

Using the qualitative approach through Case Study Methodology and IPA in this research, the author uses research methods such as observation, content analysis, semi-structured interviews, case studies, or focus groups based on the lived experience of the interviewees. The outcome reveals that EISAs do not fail the users; instead the users of the systems failed to achieve the objectives of the EISAs at the University. It is found that personal beliefs and attitudes must be divorced from what the institution-wide objectives of the EISAs are. The notion of continually challenging and reworking previously agreed concepts and strategies is counter-productive and can become a very expensive exercise. This is evident if the total amount of money and effort spent on the SEMS programme is evaluated over the last decade.



The leadership at the University has opted to fully integrate the EISAs, but has neglected or forgotten to integrate their most prized asset, the staff working on a daily basis with the EISAs. The same intensity applied to formally integrating the EISAs, the same baseline should have been used to take the affected staff on a transformational journey whilst the administrative application systems were enhanced. This journey might have addressed the disparate knowledge base, the combined intellectual knowledge (higher education administration) of some ageing senior staff, and attitudes towards the efficient and effective use of integrated EISAs in a higher education environment.

Research highlights that the connectivity of employees to an organisation's strategy and goals, and the organisation's culture with regard to acknowledgment for work well done and of learning and development, foster high levels of engagement. A workplace environment without employee engagement leads to a decline in efficiency and stakeholder value, an increase in staff turnover and low customer loyalty (Kumar and Swetha, 2011). Management,

in close collaboration with HR, needs to start fostering positive and effective people managers. This should be coupled with workplace policies and practices that focus on employee wellness, employee health and a balance between work and social activities, including life balance. Kumar and Swetha (2011) argue that the cost of poor employee engagement will be detrimental to organisational success.

The general consensus reached at the conclusion of this research is that user attitude impacts the functionality of an application system. One of the fundamental issues highlighted is the state of mind of the people utilising EISAs in their daily work-related activities. It is found that a majority of administrative staff utilising the EISAs are physically present at the University but psychologically and emotionally absent whilst performing their daily student administrative duties. It would be useful to determine if they (the users) would be willing and able to radically change their behaviour to fit the ideal of rational discourse.



The immediate urgency for the University's leadership therefore, as stated by Bongwe (2014, pp. v), is to put mechanisms in place for the staff to 'unlearn the old, negative and destructive attitudes of the past and to learn, teach, nurture and live new and constructive ones as individuals first and then as collectives ...'. Improvements can be found to deliver solutions and/or products into the University's domain, but the deep rooted malicious actions of certain individuals to satisfy their emotional egotistical agendas, must not be undermined. Undesirable actions must be dealt with to prevent prolonged negative actions and planning (undermining and cohesion).

The contribution of this research aids in the construction of a body of knowledge with regard to the attitudinal behaviour of users in the adaptation of EISAs. The academic contribution of this approach is that new knowledge is added to the base of the researched phenomena. The new contribution made by this research has resulted from exploratory methods used to

explore the role that the discursive practices and interaction of a particular group of organisational actors at the University played, in the organisational adaptation of EISAs through assumed negotiated interactions.

The scope of this research is limited to the users performing administrative duties at the University who utilise EISAs to perform their daily duties. Due to limitations in scope, academic and student activities are excluded from this research. The limitation of this research to one of South Africa's universities delimits the generalisation of this research. However, the limitations do not compromise the validity of this research.



DECLARATION

I declare that this paper on the behavioural patterns of users in the adaptation of enhanced information system applications within the confines of a South African university is my own work, that it has not been submitted before for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged as complete references.

The author declares that this dissertation is original and his own except those literatures, quotations, explanations and summarisations which are duly identified and recognised throughout this research.

Ridwaan Mallum
May 2015



Abbreviations and Acronyms

CDT	Cognitive Dissonance Theory
COTS	Commercially available Off-The-Shelf
ELM	Elaboration Likelihood Model
FOSS	Free and Open Source Software
ICT	Information and Communications Technology
EISA	Enhanced Information System Application
IOP	Institutional Operating Plan
ISF	Institutional Solution Framework
IPA	Interpretative Phenomenological Analysis
MASP	Management and Administrative Support Personnel
OCM	Organisational Change Management
PRINCE	Projects in Controlled Environments
SAS	Student Administrative System
SEICMM	Software Engineering Institute's Capability Maturity Model
SEMS	Student Enrolment Management System

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Chapter 1: Introduction and Overview

1.1 Introduction

This qualitative phenomenological case study research has taken place in a single organisational setting and is centred on the implementation and usage of an organisation-wide enhanced information system application (EISA) at a South African university, henceforth referred to as the University. The implementation of an organisation-wide EISA at an academic institution is of utmost importance to administer the student population. Without a highly effective integrated application system supported by sound infrastructure, the resources required to manually administer the student population at the University would be astronomical. The quantity and quality of resources required, besides human resources, would lead to a massive increase in the budgets required to sustain and operate the University. The student administrative applications at the University are critical in the lifecycle of the student and also the officers responsible for administering these applications.

In the fast paced highly competitive environment in which a university finds itself, the non-existence of these applications would compel the University to reconsider its purpose and objectives as outlined in the Institutional Operating Plan (IOP) 2010-2014. This research critically examines existing literature on the behavioural patterns of users, particular their attitude and behaviour (employee behavioural patterns) during the implementation and usage of software applications, and provides a reflective stance on existing debates and findings. This research specifically addresses concerns about the lack of agreement on what employee (dis)engagement is and how issues surrounding it can be addressed. An understanding of these behavioural patterns might therefore inform whether management and staff at the University must adapt their attitudinal and behavioural patterns to use the current and future EISAs more effectively.

1.2 Background to the research problem

Despite significant investments in information technology (IT), concern exists over the extent to which such expenditures have produced the intended benefits. At least part of this concern

is based around the issue of whether any IT is accepted by its intended users (Dillon, 2001; Venkatesh, Morris, Davis and Davis, 2003; Gartner ACIO, 2014). Ikart (2005) postulates that for IT to be meaningful to knowledge workers, key factors that exist in determining the user acceptance of IT applications must be taken into consideration. Ignoring such factors, he argues, often leads to the underutilisation of IT by knowledge workers. The rationale for implementing the Student Enrolment Management System (SEMS) at the University was to implement a totally integrated student enrolment process-driven software information system. The University's leadership wanted to move away from manual systems that are time consuming, costly and prone to human error. The primary objective of the SEMS programme was to improve the *attraction, retention* and *throughput* of students at the University. This objective was envisioned in the implementation of the SEMS programme deliverables. The original estimation for the completion and roll-out of the integrated solution for the University was the end of 2009.

The original planning of the projects and sub-projects which formed the core of the SEMS programme are outlined as follows:

- Project 1, was the development of the Academic Programme (AP) which was originally estimated to be completed in eight (8) months;
- Project 2, was the development of the People Record which was also estimated to be completed in eight (8) months. The People Record project was planned to start and finish together with the AP project;
- Project 3, was the development of the Application, Selection, Registration, Marketing, Financial Aid, Residence and Catering and also the Student Credit Management modules. The original estimated timeline for completion was fourteen (14) months. This project was planned to be completed just before the registration period in 2009;
- Project 4, was the development of the Promotion, Graduation and Alumni modules. The estimated start date of this project was dependent on the completion of projects 1 and 2. The original estimated timeline for completion was six (6) months;

- Project 5, was the development of the Marks Administration System (MAS) which was estimated to be completed in eight (8) months. This project was planned to start and finish exactly as the AP project;
- Project 6, was the development of the Student Tracking System (STS) which was estimated to be completed in eight (8) months. This project was also planned to start and finish exactly as the AP project;
- Project 7, was the development of the Contact Centre module;
- Project 8, was the development of the Document Management System (DMS);
- Project 9, was the development of the Business Intelligence component.

The timelines for projects 7, 8 and 9 could not be derived from the original macro plan of the SEMS programme as outlined in Figure 1.

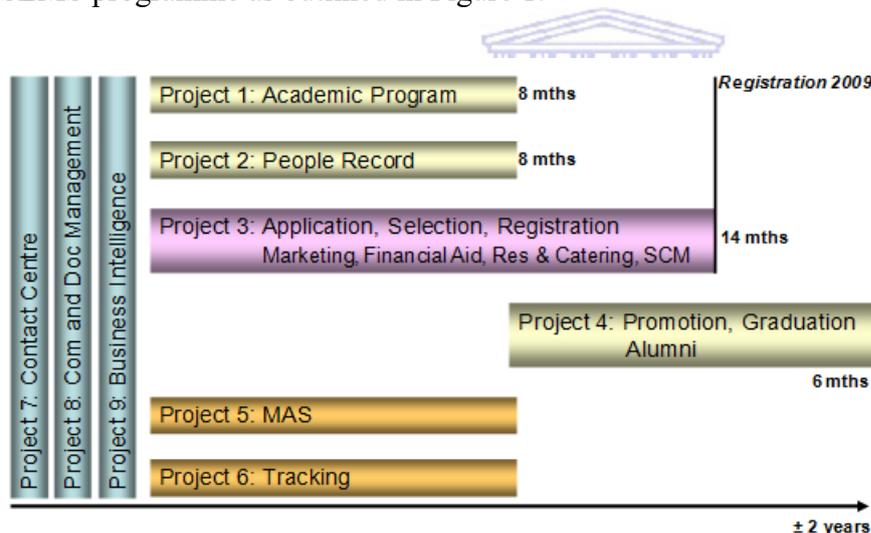


Figure 1: Original macro plan of the SEMS Programme

1.3 Statement of the research problem

Although the theme of information systems evolution and adaptation is not often explored in some strands of literature, as noted by Nasir (2005), post-implementation studies and approaches are not new and various examples can be found in the literatures of social informatics (Kling, 2000). Employee attitudinal behaviour has become a frequently debated

topic and it has been constructed in a myriad of ways (Albarracin, Blair, Johnson and Zanna, 2014). Despite this, a scarcity of critical academic literature remains on the subject, and not sufficient knowledge is available about how employee attitudinal behaviour, in particular employee engagement, can be influenced by management in the public sector. Although there is a great deal of interest in employee engagement, there is also a good deal of confusion. At present, there is no consistency in definition, with employee engagement having been operationalised and measured in many disparate ways.

Before commencing this research, the researcher studied in detail excerpts or entire passages from documents, correspondence, records and documented lessons learned about the enhanced information system application (EISA) lifecycle at the University. The initial identified behavioural patterns of users resisting changes to their new working environment included, but were not limited to:

- failure to use new functionalities of the EISA;
- requesting changes to be made to the old ISA to circumvent using the EISA;
- use of personal and impersonal tactics to deliberately derail the adoption of the EISA in certain departments by certain managerial and administrative support personnel.

These behavioural patterns are, *inter alia*, some of the factors identified which led to the premise that the EISA is not being used as intended.

The ability to adapt to frequent changes has emerged as a new paradigm for successful business operations. Legacy systems are replaced by more efficient and effective EISA systems as demonstrated and experienced by administrative support staff at the University. However, there remains a problem as the EISAs are perceived as not being used as intended at the University. This therefore raises the question of whether *negative attitude and other factors have given rise to this perceived attitudinal behaviour*. Resistance to adopt and adapt to the EISAs has profound implications for the University. The data in the EISAs is out of sync as data is still captured and manipulated in both the 'old' application and in the EISAs. The two main application systems must be synchronised at regular intervals, which does not form part of the scope of the sub-project of the SEMS programme. Some of the interfaces to the EISAs are commercially off-the-shelf (COTS) applications and the maintenance and third

line support of these applications is done by the University's information and communications technology (ICT) applications team. Therefore, this research explores the factors influencing negative attitudinal behaviour by administrative staff towards an EISA introduced to improve the value of services the University offers to prospective students, current students and all staff utilising EISAs.

1.4 Research question and sub-questions

This research addresses the research problem by means of the following main question:

What attitudinal behavioural patterns can users, i.e. management and administrative support personnel (MASP), adopt to use the current EISAs effectively?

In order to answer the main research question, a number of sub-questions have been asked:

1. What has given rise to the perceived attitudinal behaviour?
2. What are the results associated with this phenomenon?
3. Is the proficiency (i.e. the current knowledge base, skill set and attitude) of the users (MASP) sufficient to handle the outsourced EISAs effectively or
4. Is there a need for the EISAs to be changed to accommodate the users (MASP) with their varied levels of proficiencies?
5. What methods can be used to influence user attitudes to overcome the perceived behavioural patterns to support the transition to the EISAs?

Understanding what the perceptions are, why they exist, and why the perception exists that the EISAs at the University are not being utilised as intended, is further elaborated upon in subsequent paragraphs in this research.

1.5 Research objectives

In accordance with the identified problem and established research questions, the main objective of this research is to investigate attitudinal behavioural patterns that management and staff can adopt to use the current EISAs effectively and propose and recommend alternative approaches and/or methods in this regard. The aim of this research is to

investigate and understand current behavioural attitudes towards EISAs and suggests ways of developing appropriate behavioural attitudes related to the effective use of EISAs. The specific objectives that will help in achieving the main objective are defined as follows:

1. To explore the perceived attitudinal behavioural patterns of users (MASP) as well as the associated results with these types of employee behavioural patterns;
2. To identify the functional support role administrative officers and managerial staff fulfil at the University, and to determine whether their skill set is sufficient and if they are proficient in handling the outsourced EISAs effectively;
3. To determine if it is possible to influence user attitudes to overcome the perceived attitudinal behavioural patterns at the University regarding EISAs.

1.6 Research design and methodology

The method of research is a phenomenological case study in a single organisational setting and is centred on the use of an organisation wide enhanced, integrated information system application (ISA) at a university in South Africa. This research reports on a case study of various users (MASP) at the University directly and indirectly associated with various projects already completed or still in the process of being delivered under the mandate of the SEMS programme. The primary technique used to collect data is by means of unstructured interviews. The interviews are recorded and transcribed and subsequently analysed by means of the thematic content analysis method to identify themes and patterns within the themes. The data generated by the interviews are analysed using the interpretative phenomenological analysis (IPA) approach in order to arrive at the emergent themes discovered and identified later on in this research.

Documentation and direct observation are used as a secondary technique to collect data. Direct observation is used whilst interviewing the subjects, hereinafter referred to as the interviewees, and could also be used as the researcher is currently involved in the latter part of the SEMS programme. Where research involves the acquisition of material and

information provided on the basis of mutual trust, it is essential to protect the rights, interest and sensitivities of those interviewees who participated, including the researcher.

Information systems intersect with human experiences and draw on interpretive research to make sense of the process, and for this reason, Thompson (2011) postulates that IPA can be applied to IS research. IPA is therefore primarily geared at examining a person's lived experience in a particular environment. IPA is concerned with understanding what the respondent's thought processes or beliefs are about the topic under discussion (Chapman and Smith, 2002).

1.7 Research strategy

This research is exploratory in nature, investigating and trying to understand the underlying causes of the perceived behavioural patterns which might inform whether users (MASP) at the University must adapt their attitudinal and behavioural patterns to use the current and future EISAs more effectively. The particular focus that this research brings to this topic is an emphasis on the constructive and constitutive role of discourse in particular, on the role of professional discursive practices in shaping the process of organisational adoption of information systems (IS). This focus is studied in the context of exploratory research through the perspectives and discursive practices of a group of administrative support personnel involved in the use of a new set of student administrative information systems at a South African university.

Research is the process in which scientific methods are used to expand knowledge in a particular field of study (Welman and Kruger, 2002:2). Sandin and Simolin (2006:2) distinguish between three types of research: (i) exploratory, (ii) descriptive and (iii) explanatory. Exploratory research is applied when a problem is complex and little knowledge exists to address that area of study. It is typically seen in a pilot study, where the purpose is to collect as much information as possible about a specific subject. This will then generate a basis of understanding for further studies to formulate and test (Patton, 2002:227).

Babbie and Mouton (2002:80) explain that exploratory studies attempt to better understand a phenomenon and provide a platform for future research. The purpose of this research is,

firstly, to provide a better understanding of how to gauge and possibly measure intangible attitudinal behavioural patterns within a tertiary institutional context, and secondly, to ensure that the results of this research may facilitate future research, that can expand on its findings. Babbie and Mouton (2002:80) elaborate that exploratory studies typically review relevant literature and then turn to research, to obtain additional information. This research pursues a qualitative enquiry approach, due to the depth of information required for exploration purposes. To accomplish this, in-depth personal interviews are conducted to ensure the actual meaning of the information obtained, which is more valuable than being able to generalise it (Lindlof and Taylor, 2002:18).

For the above reasons, this research chooses words over numbers; researcher involvement over observation and in-depth understanding over generalisations (Merrigan and Huston, 2004:5-6). Babbie and Mouton (2002:80) explains that research following a qualitative inquiry will be open and flexible. The design strategy for this research will follow an emergent design, where the research will be open to adapting the instrument of inquiry as understanding deepens and/or situations changes (Patton, 2002:40).



1.8 Ethical considerations

Scientific research invariably involves studying beings in some form or another. Where research involves the acquisition of material and information provided on the basis of mutual trust, it is essential, according to Donnelly (2013), to protect the rights, interests and sensitivities of those who participate. Researchers can ensure they do not disclose identifiable information about participants and protect the identity of research participants through various processes designed to anonymise them (Wiles, Crow and Charles, 2006). Some of these processes are:

- The right to privacy (including the right to refuse to participate in research);
- The right to anonymity and confidentiality: No users' names and/or details will be mentioned in this research;
- The right to full disclosure about the research (informed consent);
- The right not to be harmed in any manner (physically, psychologically or emotionally).

It is hereby confirmed and agreed that this researcher undertakes to adhere to the above and in addition that no data and information that is gathered for this research will be used outside the University, nor will it be used for anything other than research purposes.

1.9 Significance of the research

The outcome of this research is rooted in an epistemological philosophical assumption, i.e. that it will add to the body of knowledge with regard to the attitudinal behaviour of users in the adaptation of EISAs. The academic contribution of this approach is that new knowledge is added to the base of this researched topic. The new academic contribution made by this research results from the exploratory methods used to explore the role that the discursive practices and interaction of a particular group of organisational actors at the University play, in the organisational adaptation of EISAs through assumed negotiated interactions.

To answer the main question of how users (MASP) can assist in changing the perceived behavioural patterns of concern to this research, Chapter 5 elaborates on what knowledge, skills and attitude the users should possess in order to manage and use the EISAs efficiently and effectively. The outcome of this research can be used by the University management and leadership to determine what elements must be employed to gauge and influence user attitudes and also how to overcome these perceived behavioural patterns in the context of the higher education sector (tertiary institution). By overcoming these perceived negative employee behavioural patterns, the University's management and leadership can formulate and suggest ways to effectively and efficiently use the enhanced, integrated ISAs in order to meet the main objective of the SEMS programme; that is, to improve the *attraction, retention and throughput* of students at the University. This objective is one of many key objectives outlined in the University's Institutional Operating Plan (IOP) 2010-2014.

1.10 Delineation and limitations of the research

The scope of this research is limited to the users (MASP) performing administrative duties at the University who utilise the EISAs to perform their daily duties. Due to limitations in scope, academic and student activities are excluded from this research. The overarching student lifecycle at the University forms the backbone of the research. Therefore, later in this research, an overview of the integrated EISA is presented to aid better understanding of the working environment of the participants.

This phenomenological case study research attempts to explore the perceived assumptions regarding employee behaviour as impacted by the introduction of EISAs in a number of comparable faculties and departments at a tertiary institute in the higher education sector. The case study research is applied in only one case, limited to one South African university, hence limiting generalisation of this research. In addition, only users that have been involved directly and indirectly throughout the lifecycle of the SEMS programme activities are considered eligible to be interviewed.

The limitations of the research are as follows:

- 
- The research is confined to only selective administrative employees (non-managerial and managers) fulfilling a support role at the University;
 - Conclusions and recommendations are based on the interactions with these user groups;
 - Interviewed participants might not feel free to express their true perceptions concerning the University because of fear of victimisation irrespective of the fact that they have been assured of anonymity and confidentiality;
 - The position that the researcher holds at the University may inhibit the interviewed participants from expressing themselves freely for fear of jeopardising their relationships with management.

The limitation of this research however should not be seen as an obstacle as it does not affect the validity and credibility of the research. Rather, the limitation to one university limits the ability to generalise this research.

1.11 Demarcation of the research

The core focus of this research is to examine and understand the perceived causes of attitudinal behaviour in using the EISAs at the University which could have resulted in the perceived inefficient usage of the EISAs in a tertiary institution. This thesis is categorised into five chapters depicted in Figure 2.

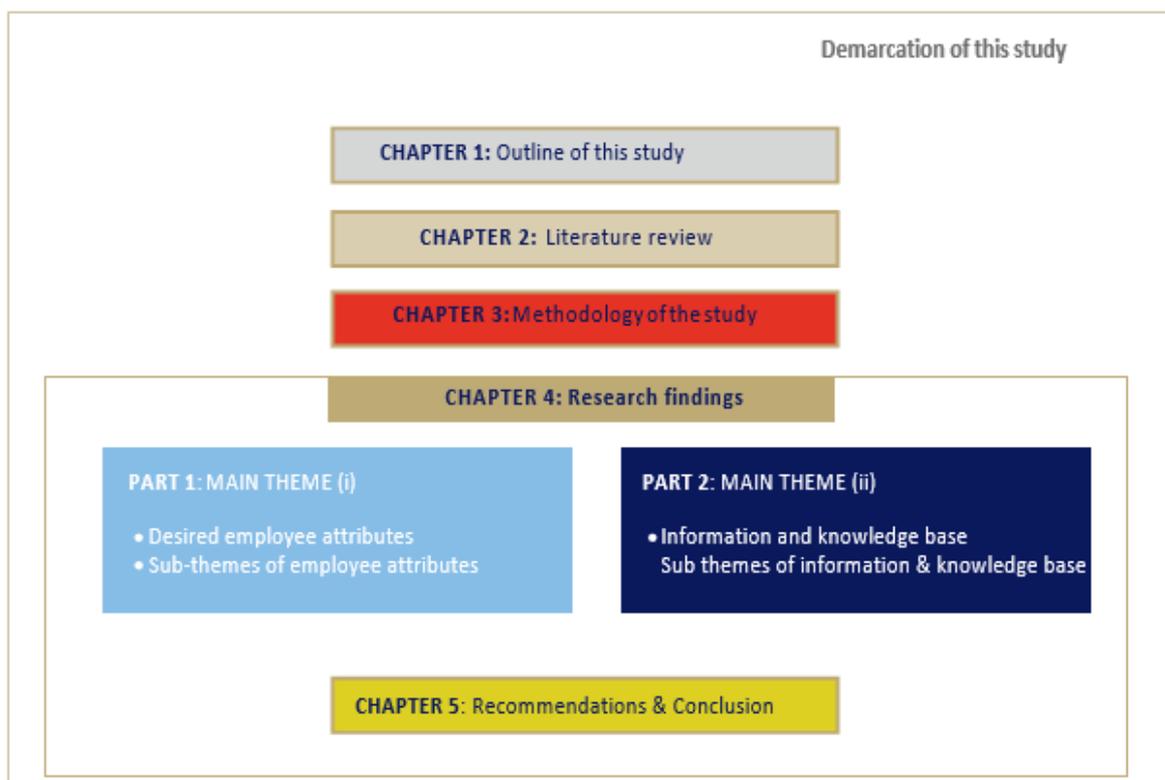


Figure 2: Demarcation of this thesis (Source: Author)

[Chapter 1](#) is an outline of the research, research questions, defining key terms, assumptions, scope, limitations, and delimitations for the research. It also looks at the design and methodology employed for this phenomenological case study.

[Chapter 2](#) discusses the findings of the literature review according to each theme of the main and sub-questions posed.

Chapter 3 outlines the research methodology utilised in this research. It also outlines the motivation of the choice of methodology using literature review as a guideline. The research strategy, the research design, sampling design, data collection method, data analysis method as well as the validity and reliability of the research is also provided in this chapter.

Chapter 4 outlines the findings of the analysis/research/interviews conducted throughout this research.

Chapter 5 concludes this research by providing various recommendations. The recommendations are presented based on the findings of the analysis outlined in chapter 4.

In conclusion, the research provides implications to ICT and student administrative users, and makes suggestions for improved usage of EISAs in the University. The next chapter (Chapter 2) explores what research has been done thus far with regard to this research topic through a literature review.



Chapter 2: Literature review

2.1 Introduction to this chapter

The main objective of this chapter is to give an overview of the literature on the perceived attitudinal behaviour of users, i.e. management and administrative support personnel (MASP), during their daily interaction with enhanced information system applications (EISAs) as applicable to the situation at a South African university. Research that addresses critical ISAs planning and implementation issues in terms of cultural factors is also reviewed. In order to better understand and research attitudinal behaviour, the researcher initially focuses on two aspects of attitudinal behaviour, i.e. engaged and disengaged employees. Later on in this chapter, the focus is also on employee commitment and employee engagement.

Further to the main objective of this research, would be to determine what the acceptable attitudinal behavioural patterns of users (MASP) should be to support the transition to EISAs at the University. It is estimated that if sufficient justification is produced, then acceptable behavioural patterns can be adopted by the leadership and management at the University. This adoption can ensure a more coherent workforce utilising the EISAs much more efficiently and effectively in their daily work activities.

2.2 Review of related principles and theories about employee attitudinal behaviour

Higher education has been influenced significantly by the advent of information and communications technology (ICT), which is regarded as the main focus of the knowledge economy and a key ingredient for achieving global competitiveness (Castells, 2001; Isaacs, 2007; Gartner ACIO, 2014).

This research explores its concepts in the IT industry, in an attempt to acquire adequate knowledge to generate a knowledge base repository which can be used to aid future research at the University with regard to the attitudinal behaviour of users in the adaptation of EISAs. In this context, an organisation is a social being (represented in this research by the

University) that interacts with its stakeholders. Moreover, in terms of the actual qualitative research conducted in this research, the users of the EISAs and faculties/departments at the University are also the social beings under study. This sort of interaction between social beings becomes an element of ontological exploration during this research. The existence of these social beings is examined to obtain knowledge about how communication, as an example, is devised and disseminated at the University.

The concepts presented in this section of the research are based on past and present theories that will aid in significantly answering the main question and sub-questions of this research. In order to conceptualise employee behaviour, two constructs are presented in this chapter to aid understanding, namely employee engagement and employee commitment. In an attempt to gauge the latter two constructs (employee engagement and commitment), an international research consultancy company completed a major survey in 2004 into the nature and causes of employee engagement. The strategic outcome of their report (ISR, 2004) identifies four global factors in managing employee engagement namely, (i) career development, (ii) leadership, (iii) empowerment and (iv) the image that companies project to customers and the public. Another outcome of the research is the recommended improvement strategies to engage employees, improve employee commitment and ultimately to enhance business performance. The ISR (2004) report suggests that each employer use its country's own norm (culture) in gauging employees' levels of engagement. Employee engagement is therefore a combination of an employee's conscious mental activities, such as thinking, understanding, learning and remembering cognitive, affective and behavioural commitment to an organisation (ISR, 2004; Albarracin *et al.*, 2014).

According to the reviewed literature (Harter, Schmidt and Keyes, 2003; Ferguson, 2007; Ajzen, 2011; Albarracin *et al.*, 2014) various and conflicting definitions of employee engagement are suggested. Harter *et al.* (2003), postulate that employee engagement is that which the individual brings to the workplace, whilst in subsequent research, Harter *et al.* (2003) suggest that employee engagement is produced by aspects in the workplace. Ferguson (2007) argues that extraneous variables such as individual differences could have significant effects on employee engagement. It is not easy to summarise these and other findings in respect of employee engagement. Suffice to say, that researchers are putting more effort in

trying to find solutions to this universal problem of improving the employer/employee relationship through better employee engagement (Albarracin *et al.*, 2014).

Albarracin *et al.* (2014) argue that although the term attitude is ubiquitous in the literature, precise definitions are less common. For an attitude to exist *per se*, they argue that it is sensible to view attitude as a type of a knowledge structure in memory or created according to judgment. They expand on the work of past attitude theorists (e.g. Fazio, 1989) by arguing that the link between the two theorized nodes (i.e. the object and global evaluation of the object), is the strength of the association between the two nodes. This strength of the association is the accessibility of the attitude (Albarracin *et al.*, 2014).

2.3 Definition of Attitude

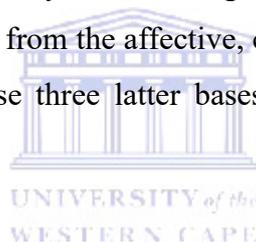
Petty and Krosnick (2014) suggest that attitude has been defined as a mechanism to evaluate, amongst others, people in a particular way. Some of the evaluated observations about attitude are positive, at times negative or even neutral. They argue that some of these mechanisms used to evaluate behavioural patterns include, *inter alia*, work environment culture, employee commitment, employee engagement, employee disengagement and factors such as job satisfaction (Ajzen, 2011). It is generally assumed that people behave in accordance with their attitudes. Social psychologists postulate that employee attitudes and actual behaviour are not always aligned (Harter *et al.*, 2003).

Petty and Wegener (2004) posit that the attitude construct is the most indispensable construct in contemporary social psychology. They argue that attitude is used to refer to a person's overall evaluation of others (including oneself) based on emotions, past experiences, behaviours and beliefs. These global evaluations vary from being internally consistent (i.e. associated largely with positive feelings, attributes and behaviours) to ambivalent (i.e. a combination of positive and negative attributes).

The research conducted by Hofstede (1985) on employee attitudes contributed greatly to a better understanding of cross-cultural differences as well as the causes of employee attitudes. Saari and Erez (2002) argue that culture as well as the type of job a person has, is a strong

predictor of employee attitudes. Pratkanis, Breckler and Greenwald (2014), argue that past research (e.g. Allport, 1935) regarded the importance of attitudes as being so evident that it was not necessary to detail the basis for the assertion of its importance. Petty, Fazio and Briñol (2012) point out that attitude, as the subject, has captured researchers' attention, in particular the manner in which attitude can be assessed in various forms. They argue that the automatic evaluation reactions are inconsistent with 'the self-reports' that people provide. These types of inconsistencies lead them (ibid) to research the discrepancies that automatic evaluation measures bypass social desirability concerns. This is also confirmed by more recent studies (e.g. Petty *et al.*, 2012; Petty and Krosnick, 2014).

Albarracín *et al.* (2014), acknowledge the earlier contributions of the tripartite theory that attitude has three components or bases (i.e. affective, cognitive and behavioural). The contemporary view (Albarracín *et al.*, 2014) is that attitude is distinguishable from the classes of affect, cognition and behaviour. They therefore argue that attitude is a general evaluative summary of the information derived from the affective, cognitive and behavioural bases. That is, attitude does not consist of these three latter bases only (Zanna and Rempel, 1988 in Albarracín *et al.*, 2014).



Employee commitment, according to the reviewed literature (McGee and Ford, 1987; Meyer and Allen, 1991; Park and Rainey, 2007), receives attention in the determination of organisational goals and successes. Cooper-Hakim and Viswesvaran (2005), as well as Jaramillo, Prakash, and Marshall (2005) have found, based on congruent research, that organisations benefitted from engaged and committed employees. They assert that the benefits the organisations enjoyed included, *inter alia*, increased worker productivity; improvement in customer satisfaction; higher employee retention and reduced employee absenteeism. Petty and Krosnick (2014) postulate that attitude crystallization in general refers to resistance to change. The attitudinal behaviour might be attached to a number of strong beliefs held by the individual. Therefore, Petty and Krosnick (2014) argue that the attitude might be extreme because to the individual, it might be deemed legitimate and the individual may go to great lengths to defend his attitude.

2.3.1. Employee behavioural patterns

Meyer and Herscovitch (2001) posit that engaged employees are involved and enthusiastic about their work, whereas employees not engaged in their work might show signs of being dissatisfied. These non-engaged employees might not be emotionally connected to their workplace and might therefore be less inclined to put in extra effort in their work. Meyer and Herscovitch (2001) postulate that actively disengaged employees can derail the performance effort of the team as a result of employees being emotionally disconnected from their work environment.

The employee behavioural patterns listed in Figure 3 are some of the themes identified throughout this research. They are presented in a tabular format in Table 1.0.

Table 1.0: Employee behavioural patterns

Theme identification	Description	Reference
Engaged employees	<i>Employee engagement is the self-image of employees in performing their daily tasks</i>	<i>Khan (1990); Meyer and Herscovitch (2001); Robinson, Perryman and Hayday (2004); May, Gilson and Harter, (2004); Officevibe (2013)</i>
Disengaged employees	<i>Disengaged employees are regarded as being very negative in all aspects of the environment they occupy at work. Influencing factors include Fear; Resistance; Inadequacy; Frustration; Suspicion; Offense; Confusion; Indecision; Abandonment; Invisibility; Isolation</i>	<i>May et al., 2004; Krueger and Killham (2006); Officevibe, 2013</i>
Employee commitment	<i>Employee commitment is deemed a psychological state that compels an individual toward a course of action of relevance to one or more targets</i>	<i>Meyer and Herscovitch (2001); Petty, Schumann, Richman and Strathman (1993a); Petty and Wegener (2004); Park and Rainey (2007)</i>
Employee loyalty	<i>Employee loyalty can be defined as employees who are devoted to the success of their organisation - they plan to remain with the organisation and they do not actively seek for alternative employment opportunities</i>	<i>Petty et al. (1993a); Petty and Wegener (2004); ISR (2004)</i>
Employee burnout	<i>Burnout is a state of emotional, mental, and physical exhaustion caused by excessive and prolonged stress resulting in feeling overwhelmed and unable to meet constant demands and losing interest or motivation that led to the person taking on a certain role in the first place</i>	<i>Maslach and Schaufeli (1993); Schaufeli and Bakker (2004); Smith, Segal and Segal (2014)</i>

Emotional attachment (identify with and involvement in the organisation)	<i>Emotional attachment is an aspect of interpersonal relationships that varies in intensity from one relationship to another and varies from one time to another</i>	Meyer and Allen (1991); Meyer and Allen (1997)
Topics of discourse	<i>The willingness or lack thereof to partake and share knowledge of current system capabilities</i>	Venkatesh and Davis (2000); Venkatesh et al. (2003)
Malevolent – malicious behaviour	<i>Showing a tendency or the wish to harm and/or do evil to others</i>	INT #1, INT #2
Employee plateauing	<i>Employee plateauing is a situation when an employee reaches limits of promotional potential for his/her current position or job</i>	TMG (2013)
Normative disagreement	<i>Disagreement element in the thought process (dissent)</i>	Purcell, Kinnie, Swart, Rayton and Hutchinson (2009)
Undesirable behaviour	<i>Mistrust, back biting, politicking, bad mouthing, back stabbing, professional sabotage (i.e. Deliberately not attending meetings etc.)</i>	Schaufeli and Bakker (2004); Purcell et al. (2009)



Figure 3: Employee behavioural patterns (Source: Author)

2.3.2. Engaged employee

In the reviewed literature it is acknowledged there is generally a lack of a universal definition of employee engagement. Employee engagement has been defined in many different ways, and in some instances definitions of employee engagement mimic established constructs. Some of these constructs identified include organisational commitment and organisational citizenship behaviour (Robinson *et al.*, 2004). In some instances research predicates that employee engagement is the self-image of employees in performing their daily tasks. Engaged employees tend to attach themselves emotionally and physically to what they perceive as doing the right things for the right reasons. Any deviation from the norm of what they perceive as being their ideal work environment is disregarded and viewed in a negative vein.

Kahn (1990, pp. 694) defines employee engagement as “the harnessing of organisation members’ selves to their work roles ... during role performances”. The early work undertaken in the 60’s by Festinger (best known for his theory of cognitive dissonance), postulates that people experience tension or discomfort when their beliefs do not match their behaviours. He argues that people tend to seek consistency in their beliefs and perceptions. An important consideration by this research focuses on the discrepancy between beliefs or behaviours or when some of our beliefs conflict with another previously held belief. In order to eliminate or reduce the dissonance, this research aims to determine what behavioural employee attitudes certain administrative staff at the University must adopt or not, to efficiently and effectively utilise the EISAs.

The general cognitive dimensions of employee engagement espoused by Khan (1990) rotate mostly around three factors. He (*ibid*) argues that employees are concerned about (i) what their organisation can do for them, (ii) the makeup and performance of the organisation’s leaders and (iii) the working environment and conditions they find themselves in. The emotional aspect of employees tends to be more focused on the attitude (negative or positive) towards its leaders and the performance of the organisation as a whole. The physical aspect of

employee engagement tends to be more concerned about efforts and energies exerted by individuals to accomplish their roles. In order to perform a role, Kahn (1990) suggests that engagement means that an employee needs to be psychologically and physically present.

Employee engagement has also been defined as the emotional and intellectual commitment to the organisation (Baumruk, 2004; Shaw, 2005; Richman, 2006). Frank, Finnegan and Taylor (2004) posit employee engagement as the amount of discretionary effort exhibited by employees in their job. Khan (1990) postulates that employee engagement is a multi-faceted construct, whereas Truss, Soane, Edwards, Wisdom, Croll and Burnett (2006) see employee engagement as simply a 'passion for work', with the three dimensions of employee engagement espoused by Khan as the common denominators.

Saks (2006) asserts that employee engagement is related to other organisational behavioural constructs but also distinct from it. He argues that organisational commitment refers to a person's attitude and attachment towards their organisation, whereas the engagement construct is not merely an attitude, but the degree of attention the employee gives to the role they occupy in the workplace and the performance (execution) of the role (ibid). In addition, organisational citizen behaviour (Robinson *et al.*, 2004) tends to involve voluntary and informal behaviours that can help co-workers and the organisation. Therefore, the formal role performance of an employee, rather than purely extra-role and voluntary behaviour, is the focus of engagement (Robinson *et al.*, 2004).

May *et al.* (2004) however, argue that engagement is more associated with the constructs of job involvement and 'flow' (Csikszentmihalyi, 1990). The argument put forth by Saks (2006) is in congruence with what May *et al.* (2004) suggested, that engagement differs from job involvement as the latter is more concerned with how individuals apply themselves during the performance of their jobs. Engagement however, according to most definitions, also encompasses emotions and behaviours, whilst the focus of job involvement is on cognitions (May *et al.*, 2004).

According to the International Survey Research (ISR, 2004) and expanded by Robertson-Smith and Markwick (2009), employee engagement can best be described as a process by

which an organisation increases commitment and contribution of its employees to achieve superior business results. The ISR (2004) report resolves that employee engagement is a combination of an employee's cognitive, affective and behavioural commitment to an organisation. Drivers of employee engagement relate to levers that can be pulled to maximize the impact on engagement. These levers or key drivers are seen as significant to employee engagement (Melcrum, 2005).

According to MacLeod and Clarke (2009: pp. 33), some of the commonly agreed enabling characteristics that lie behind successful engagement approaches are: (i) Leadership who 'walk-the-talk' when it comes to the organisational culture which enable employees to align their job to the mission and objectives of the organisation, (ii) Engaging managers who clarify, appreciate and treat their staff as individuals instead of just a number. These managers must be supportive and ensure the workload is organised to ensure effective and efficient processes to make the employee feel more valued and equipped to do their jobs, (iii) Employees being able to voice concerns and/or suggestions on how they can do their job better in partaking in decision making and/or sharing of issues (problems and challenges) in their respective departments, (iv) Employees wanting to believe organisational leadership 'talks-the-walk', i.e. lives its values and norms that the organisation adheres to, resulting in trust and giving a sense of integrity to all staff.

Seijts and Crim (2006) expound the earlier work done by Rutledge and McKinsey, whereby they argue that truly engaged employees are attracted to, and inspired by, their work ("*I want to do this*"); engaged employees are committed ("*I am dedicated to the success of what I am doing*") and engaged employees are fascinated ("*I love what I am doing*"). Engaged employees, according to Seijts and Crim (2006), care about the future of the organisation and are willing to invest the discretionary effort, exceeding duty's call, to see that the organisation succeeds.

Having engaged employees and keeping them engaged requires a special type of leadership style. According to the reviewed literature (Herold, Fedor, Caldwell and Liu, 2008 cited in Matlosa, 2014) the leadership role of inspiring change at an organisation is significant. Ideally it demands a charismatic leader. This type of leader is defined as having special

qualities that enable the leader to mobilise and sustain activity within an organisation through specific personal actions combined with perceived personal characteristics. The first characteristics include envisioning, which involves articulating a compelling vision, setting expectations and modelling consistent behaviours. The second is energising, by demonstrating personal excitement, commitment and seeking, finding and using success. The third is enabling, which entails empathizing, expressing confidence in people and giving personal support.

2.3.3. Employee commitment

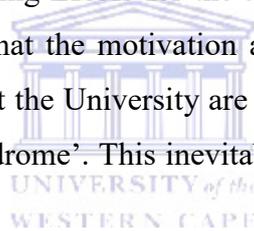
The definition of employee commitment by (Meyer and Herscovitch, 2001, pp. ii), is a “frame of mind or psychological state that compels an individual towards a course of action of relevance to one or more targets”. They (ibid) identify desire, obligation, or opportunity costs as the three distinct bases of commitment. In past literature (Chen and Francesco, 2003; Stephens, Dawley and Stephens, 2004; Boehman, 2007), these typologies are referred to as affective commitment (AC), normative commitment (NC) and continuance commitment (CC). Wasti (2002) argues that AC is the most powerful, whereas Meyer and Herscovitch (2001) argue that AC is the most transitory. The research conducted by Cheng and Stockdale (2003) suggests that AC is more subject to influence by an employee’s manager, unlike NC and CC, whereas other research conducted (Meyer and Herscovitch, 2001; Meyer, Stanley, Herscovitch and Topolnytsky, 2002) suggests that AC has been found to have stronger links to behaviour, particularly discretionary behaviour.

According to the reviewed literature, Meyer and Allen (1991, pp. 61) suggest that AC can be defined as an individual’s “emotional attachment to, identification with, and involvement in the organization”. In later research, Meyer and Allen (1997) posit AC as a desire to follow a course of action of relevance to the target. Individuals with high levels of AC to an organisation show acceptance of organisational goals. They also show a strong belief and excitement about the organisation’s goals and achievements. These individuals willingly show a desire to contribute and be part of the organisational goals as it aligns with their inner aspirations and individual goals. Such alignment behaviour is a perception of alignment of goals between the individual and the organisation.

Such alignment behaviour leads to a belief that the career aspirations of an individual can be satisfied in the context of the organisation. Morrison (1994) posits that the basis of the relationship of this type of individual with the organisation, is an open-ended exchange rather than a narrowly focused transactional contract. Johnson, Chang and Yang (2010) argue that employee commitment is important because it accounts for commitment to multiple constituents (e.g., commitment to the organisation and to the employee's supervisor). Before an employer invests in improving employee commitment by engaging the employee, IT leaders must first understand what engagement is, how to measure it and provide improvement (Poitevin, Hanscome and Cameron, 2015).

2.3.4. Employee disengagement

The new way of working brought about by the perceived inefficiency of the old administrative ISA has forced the University to restructure itself in an attempt to operate more efficiently through implementing EISAs for the administering of student affairs at the University. It has been suggested that the motivation and commitment of those employees who remain 'loyal' to the old ISA at the University are reduced, as they experience what has been described as the 'survivor syndrome'. This inevitably leads to employee disengagement (Sturges, 2006: pp. 49).



Research by Krueger and Killham (2006) suggest that disengaged employees act out this particular behaviour in the workplace and undermine what their focused and more committed colleagues try to accomplish. They suggest that disengaged employees are emotionally disconnected from their workplace and their working colleagues. According to the reviewed literature (Officevibe, 2013), certain personality traits are common to disengaged employees. There are those who (i) constantly complain about everything in their work environment and nothing is ever good enough for them, (ii) continuously make excuses and seldom take responsibility for their actions, (iii) lack enthusiasm when new work is presented to them, (iv) create boundaries in their work environment and do not move outside of those boundaries and do not extend help to their colleagues, (v) are at the centre of the grapevine gossip which destroys morale and team dynamics, (vi) make up stories and lie to justify any of their behavioural patterns, (vii) come across as knowing everything about anything, (viii) tend to

work in isolation and do not contribute to their working environment's dynamics, (ix) show no initiative in their work environment and wait to be told what to do, (x) are irresponsible, miss deadlines at will, have infrequent work attendance and do not uphold promises made, and (xi) are easily distracted, show little interest in their surroundings and hardly ask any questions to further themselves in their careers.

Employee plateauing also contributes to employee disengagement. Employee plateauing is defined as the situation in which employees reach the peak of their limits of promotional potential in their current positions or the functionality of their job itself. Employee plateauing can develop serious problems as plateaued employees often feel, unchallenged, demotivated, and hence frustrated, depressed, demoralised and disinclined to move forward. According to the reviewed literature (TMG, 2013) factors that lead to reduced profits of an organisation as a result of employee plateauing are absenteeism, high staff turnover and low productivity. Poitevin *et al.* (2015) argue that in order to counter employee disengagement, IT leaders must seek opportunities to leverage employee engagement measurement in decisions related to business operations, work patterns and individual career development.

2.4 Patterns influencing employee behaviour

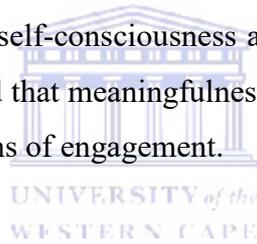
The themes/patterns identified as described below do not follow a particular work sequence at the University; instead they follow the sequence of the research for this paper.

2.4.1. Attachment to and detachment from roles

The research undertaken by Khan (1990) is considered as one of the most influential studies of engagement. In the research on the psychological conditions of personal (dis)engagement, disengagement is defined as the decoupling of the self within the role, involving individuals withdrawing and defending themselves during role performances (May *et al.*, 2004). In reference to disengaged employees, he (Khan) finds that they display incomplete role performances, show little effort, and tend to display robotic symptoms, i.e. being automatic. When it comes to engagement or disengagement at work, Khan finds three related psychological conditions namely, (i) meaningfulness, (ii) safety and (iii) availability.

In each role situation, Kahn (ibid) argue that people ask the following questions in respect of the three related psychological conditions he identifies: how meaningful would it be for the person to bring her/himself into performance; the safety aspect of the performance (task; and the availability of the person to do the task. Of the three related psychological conditions, Khan finds that people are more engaged psychologically when it comes to meaningfulness and safety in respect of task performance compared to their being psychologically available.

May *et al.* (2004) empirically tested Kahn's (1990) model and congruently find that the three related psychological conditions, (i) meaningfulness, (ii) safety and (iii) availability are significantly related to engagement. Positive predictors identified include job enrichment for the psychological condition of meaningfulness; the organisational practise of rewarding co-worker and supportive team lead relations for the psychological condition of safety, and resources for the psychological condition of availability. The negative predictors identified are adherence to co-worker norms, self-consciousness and participation in outside activities. Furthermore, (May *et al.*, 2004) find that meaningfulness overall, has the strongest relation to different employee outcomes in terms of engagement.



2.4.2. Employee loyalty

The threat of losing for example seniority, friendships, hierarchical position, and knowing the routines, and a perceived lack of alternatives to replace or make up for them commits a person to staying with an organisation. Not much emphasis is placed on this theme (employee loyalty) as the participants of this research took it as a de facto to work at the University, which ultimately provides sustenance to them and their families. By default they feel loyal to the University as a higher education tertiary institute.

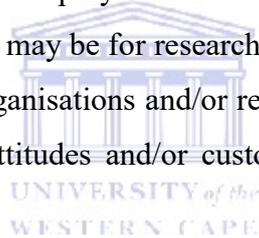
2.4.3. Employee burnout

According to the reviewed literature burnout may be the result of unrelenting stress, for example doing work that is monotonous and unchallenging or working in a chaotic or fast paced high-pressure environment. The primary damage of burnout is emotional and is

characterised by disengagement. Burnout reduces productivity and it leaves the individual hopeless, helpless, cynical and resentful which result in the resource feeling as if he/she has no more to give. The negative effects of burnout spill over into other areas of the individual's life whether it is social, private or work related (Smith *et al.*, 2014). They argue that from a work-related point of view, burnout causes feelings of little or no control over your work; leads to detachment from work and depression; emotions are blunted; employees feel lack of recognition or rewards for good work. Burnout can also be described as a state of mental weariness occurring exclusively in the human services among those who do 'people work' (Maslach and Schaufeli, 1993 cited in Schaufeli and Bakker, 2004).

2.4.4. Job satisfaction

Past adapted research (Judge, Erez, Bono and Thoresen, 2001) about job satisfaction has led to greater scientific understanding of employee attitudes. The greatest value of this scientific understanding of employee attitudes may be for research purposes and possibly useful for HR practitioners as well. In practice, organisations and/or researchers often wish to obtain a more detailed assessment of employee attitudes and/or customize their surveys to assess issues unique to their organisation.



In research conducted by the Performance Enhancement Group (PEG, 2009) at the University of Baltimore, it was found that the difference between importance and performance is an indicator of agitation. This "agitation gap" they argue, reflects the level of irritation that exists when employee performance is below par and does not live up to expectations. Their research indicated that perception of importance increases as agitation increases. Once employee performance meets or exceeds expectations, then agitation declines.

2.4.5. Meetings etiquette

Regarding employee satisfaction with meetings, the 'meetings' literature suggests that it should be regarded as an important and discrete facet of job satisfaction (Rogelberg, Allen, Shanock, Scott and Shuffler, 2010). Meetings in many organisations are used for a variety of purposes. Whether meetings are held for information sharing, problem solving and decision

making, brainstorming, training or socializing, the fact is that meetings are quite prevalent, given the multitude of uses (Rogelberg *et al.*, 2010). One estimate suggests that there are 11 million meetings each day in the United States alone (MCI Inc., 1998 cited in Rogelberg *et al.*, 2010). The amount of time spent by senior and middle management in meetings, whether preparing, attending or following up on post meeting activities, varies from organisation to organisation and from country to country. Suffice to say, meetings form an integral part of leading and managing organisations and their associated workforce. More recently, it has been found that managers in small organisations spend approximately 10 percent of their time on meeting activities, whereas managers in large organisations spend closer to 75 percent of their total time on meeting activities (Leach, Rogelberg, Warr and Burnfield, 2009).

Rogers (1983) posits that the social interaction of meetings is generally a process consisting of actions, reactions, and mutual adaptation between an individual and other individuals. The goal of the social interaction is to communicate with others, irrespective of the medium used, and these interactions include all spoken languages, sign language, mannerisms and even body language. This at times is referred to as the meeting modality. If the interaction ends prematurely, it can be conserved by conforming to the others' expectations, by ignoring certain incidents or by solving apparent problems (*ibid*). According to the reviewed literature on design characteristics on perceived meeting effectiveness, it has been found that agenda use, meeting punctuality, and facility quality were related to more positive perceptions of a meeting's effectiveness (Leach *et al.*, 2009).

2.4.6. Homophilous behaviour

Various theories have been proposed to explain the homophily phenomenon. Social-psychological studies have noted that one of the most prominent features of social interactions is homophily, i.e., individuals prefer to interact with others with similar background or opinions (Hall, Ariss and Todorov, 2007). Rogers (1983) defines homophily as the likeness of interacting pairs of individuals, i.e. **individual behaviour** (own emphasis) showing similarity in certain attributes such as beliefs, education and social status. Rogers posits that individuals, if given the option, usually choose to interact with someone similar to them. Homophilous individuals engage in more effective communication because their

similarities lead to an increase in knowledge as well as influencing attitudinal behavioural change. Ma, Krishnan and Montgomery (2009) suggest that the involvement of two or more homophilous individuals, except in knowledge of the innovation, forms part of effective engagements.

Blau (1977) argues that homophily is mainly due to structural constraints of the society that limits individuals' ability to interact with others with different backgrounds or opinions. McPherson, Smith-Lovin and Cook (2001) suggest that homophilous behaviour is largely due to individual choices within social structures. Ma *et al.* (2009) question the direction of the causality and propose that the homophily phenomenon could be the result of social influence through interactions.

Some popular constructs researched by McPherson *et al.*, (2001) i.e. "birds of a feather flock together"; Bishop (2008) i.e. "the divided nation – the big sort"; (Cha, Mislove, Adams and Gummadi, 2008) i.e. "social cascades", all have roots in the behaviour of **individuals in groups** (own emphasis). The homophily behaviour observed in many political or cultural communities has led to the formulation of numerous popular constructs, as mentioned above. All these lead back to the behaviour that individuals seek information or join groups that align with their prior beliefs and biases. The purpose of this research is not to explain why resources (users) are homophilous, but rather to explain some empirical evidence about the patterns of homophily of individuals and individuals across groups.

Different groups are therefore characterized by different "baseline" degrees of homophily, even in the absence of biases in their attitudes towards dissimilar individuals or in their meeting opportunities (Currarini and Redondo, 2010). What is most striking about the empirical evidence of many social networks is that the observed homophily is often in excess of this baseline level, suggesting that the generative process of encounters is far from uniformly random, and is likely to be biased by the individuals' selective choices of assortment and/or by selective constraints that individuals face in meeting each other. This has important implications for policy makers since users behaviour may lead to actual segregation patterns that depart dramatically from the baseline level implied by Currarini and Redondo (2010).

2.4.7. Self-efficacy

Believing in your own capability to deliver or perform a particular task is referred to as self-efficacy. Self-efficacy therefore affects effort, persistency, interest in the tasks and the level of difficulty selected for performance. Bandura (1977a, p. 194) suggests that the three levels of self-efficacy are: (i) Magnitude which applies to task difficulty; (ii) the strength of one's conviction of magnitude and (iii) the general degree of expectation across situations. Subsequent studies suggest that believing in your own capabilities is a predictor of motivation and better task performance.

2.4.8. Social and economic networking

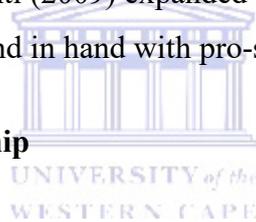
One of the pervasive features of social and economic networking, (Santos *et al.*, 2008) suggest, is that contacts tend to be more frequent among similar users rather than among dissimilar ones. This feature, also at times referred to as homophily, applies to many types of social interaction and many dimensions of similarity. The presence of homophily has important implications on how information and other aspects of social communication flow on the networks of social contacts (ibid). It is therefore important to understand the generative process of social networks, and how attitudes and meeting opportunities concur in determining the observed mix of social ties.

Smith-Doerr and Powell (2003) have stressed the importance of the individuals' position in a group, whilst Fowler and Christakis (2010) argue that interacting in large groups without structure, greatly reduces the likelihood of co-operation. The nominated resource to chair such groups needs to be an unbiased individual with the interest of the University always enjoying focus and priority. The networking within such diverse groups should be based on sound professional objectives clearly spelt out by a meeting agenda. Being connected makes cooperation within the group easier. From a theoretical point of view, the more connected users are with each other, that is, the denser the network, the higher the cooperation rate. Information about the decisions of others may act as a dynamic coordination device (Skyrms

and Pemantle, 2000), and heterogeneity may even improve co-operation prospects (Santos *et al.*, 2008).

In any organisation, participants carry with them their own experience with pre-existing social networks. So, their social networks can be elicited in an experiment to understand their properties and how they shape social behaviour. Leider, Mobius, Rosenblat and Do (2009) exploited this possibility by conducting an online field experiment in which a real social network is first elicited to distinguish between different components of pro-social behaviour. Their results suggest that real social networks also group together socially oriented individuals, and that the possibility of interacting in the future with the same individuals positively strongly affect cooperation. Goeree, McConnell, Mitchell, Tromp and Yariv (2009) combine survey and experimental data on real social networks to detect homophilous behaviour. Subjects connect to other participants similar to them. Brañas-Garza, Cobo-Reyes, Espinosa, Jiménez, Kovarik and Ponti (2009) expanded on the work of Leider *et al.* (2009) to show that social integration goes hand in hand with pro-social behaviour.

2.4.9. The scholarship of leadership



The reviewed literature in the determination of effective leadership gave scholars an inconclusive history to establish the traits and behaviours of such action. More recent research (Avolio and Gardner, 2005; Hooijberg, Hunt, Antonakis, Boal, and Lane, 2007) focuses on leadership that is transformational versus transactional, and leadership that is "authentic". The definition of what leadership is depends on the epistemological and ontological stance and assumptions (Hunt, 2004). The generic and possibly naïve stance taken by Jonsen and Maznevski (2010), postulates that leadership in organisations is about defining, setting and communicating direction for the collective for their subordinate units. Organisations are often defined publically by their leaders at the very top level and executives at tertiary institutions are invariably investigated, as in the case of the University of KwaZulu-Natal (Jack, 2012), but leadership is important throughout management levels (Zaccaro and Banks, 2001) and prevalent in much of the management literature.

Gray (2008) posited the idea that men and women are 'from different planets', and (Senge, 2008) their ways of leading differ innately in a perceived male dominated culture. Empirical evidence however does not indicate significant gender differences in leadership. In fact, the results of the role of gender and leadership research over the last 20 years remain largely inconsistent (Eagly and Johannesen-Schmidt, 2007). Some of the reviewed literature (Eagly, Johannesen-Schmidt and van Engen, 2003; Alimo-Metcalfe and Alban-Metcalfe, 2003) supports the notion of gender differences, for example, that women tend to be slightly more "transformational", democratic, participative and inclusive. Gender related comparisons research on leadership styles according to masculine and feminine traits is extensive (Carless, 1998). This approach, however often associates male leadership styles with instrumental, "transactional" qualities, whereas female leadership styles are more associated with communal, nurturing and people-oriented qualities (Gibson, 1995). Both of these leadership styles are either considered to be incongruent with idealized leadership attributes "Think manager think male," (Schein, 2001) or represent the so-called "feminine advantage" (Rosener, 1990).



2.4.10. Coping with complexity of adaptive systems

It is imperative to understand how people negotiate their unique individual identities in the face of strong social demands toward shared collective identity. Today's society is replete with social groups such as organisations, clubs, churches, and vocations that ask their members to submit, surrender, and succumb to the needs, values, or identities of the collective (ISR, 2004). Individuals and systems change because they need to adapt to their environments. Pedagogical research has shown that adults choose to learn because they want to change (Fraser and Greenhalgh, 2001). The process of developing new behaviours in the context of real life experiences enables individuals to adapt to or co-evolve with new situations, thereby supporting the transition from individual competence to personal capability (Hite, 1999 in Fraser and Greenhalgh, 2001).

Given the preponderance of popular writing on the over-worked, under-refreshed, too-stretched-out modern man or woman, these social groups might be getting precisely what

they ask for. Yet complete conformity to collective identity can result in excessive homogeneity of a social group, which is detrimental to creativity, innovation, decision making, and a host of other important social processes. Hence, individuals and those who share responsibility for their well-being (e.g., managers, mentors) face an on-going tension about preserving personal identities in the context of ubiquitous social, organisational, and occupational identity demands (ISR, 2004).

The exhortation to “feel good about not knowing everything” resonates well with complexity theory's acknowledgement of the uncertain and unknowable and with the need to be alert to emerging information from different sources. The modern expert is someone who knows how to access knowledge efficiently and judiciously and who can form conceptual links between seemingly unrelated areas.

2.4.11. Human capital: the knowledge and expertise of employees

Gleadle and Bakhru (2007: pp.11) argue that the assets of a firm are its human resources, and capabilities are considered to underlie its competitive advantage (Gleadle and Bakhru 2007: pp.11). It is mentioned that organisations need to focus on the assets, that is, its resources and ability to coordinate and manage them. Accordingly, based on the argument put forward by Gleade and Bakru (2007), the University should, on the human aspect, not only focus on skills and know-how but should build a capacity for communication and involvement which if executed effectively, will yield a motivated employee force. Gleadle and Bakhru (2007: pp.12) further point out that the skills and know-how are often taken for granted as organisations give attention only to the tangible and not the intangible assets of the organisation.

To differentiate themselves, organisations are currently investigating innovative avenues that will provide them with some sort of competitive advantage over other organisations. Kaplan and Norton (2004:10) claim that organisations are currently creating sustainable value from leveraging their intangible assets. Additionally, Sim and Koh (2001:18) explain that strategically orientated organisational performance measurement models should report on resources such as intellectual capital, customer satisfaction, employee satisfaction or

innovation. Marr, Schiuma and Neely (2004:551) agree, stating that the ‘true’ value of an organisation today can only be assessed by considering the intangible assets.

According to Simkovic (2011), human capital is the primary source of competitive intangibles for organisations today. He argues that human capital is the stock of competencies, knowledge, social and personality attributes, including creativity, embodied in the ability to perform labour so as to produce economic value. Accordingly, it is an aggregate economic view of the human being acting within economies, which is an attempt to capture social, biological, cultural and psychological complexity as they interact in explicit and/or economic transactions. Many theories explicitly connect investment in human capital development to education, and the role of human capital in economic development, productivity growth, and innovation has frequently been cited as a justification for government subsidies for education and job skills training (Simkovic, 2011).

2.4.12. Tacit Knowledge



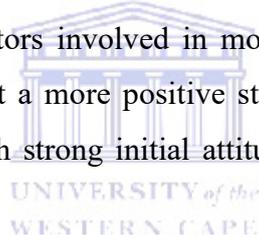
Randall (2004) suggests that to affect envisaged organisational change, the lived experience of resources involved in processing change initiatives, must be taken into consideration. Cognisance should be taken of the pressure, constraints and contradictions the resources encounter in their work environment. Doyle, Claydon and Buchanan (2000) suggest that human resources’ emotional feelings, personal views and assumptions affect the implementation of all organisational policies and any initiatives aimed at increasing employee engagement and commitment. The lived experience of resources tasked with executing and delivering organisational changes, is obliquely addressed in research about employee engagement and commitment.

The amount of information (tacit knowledge) stored in the heads of the ageing senior administrative staff at the University cannot be quantified in this research. Suffice to say, the knowledge base of these walking encyclopaedias must be tapped in order to access the tacit knowledge they possess. In Chapter 5, recommendations are suggested to address this issue.

2.4.13. Lack of change initiatives

Given the power of attitude to determine many actions (Petty and Wegener, 2004), it is therefore not surprising to note the global financial effort put into influencing and changing people and their evaluations of issues. They (ibid) argue that attitude change of an individual occurs when the person's evaluation is modified from one value to another. This change is assessed relative to the person's initial attitude. Bringing about change in attitude and/or beliefs by presenting facts and information is called education, whereas trying to bring about change by slanderous information and evidence is propaganda (Zimbardo, Ebbesen and Maslach, 1977 in Petty and Wegener, 2004).

In their research about attitude change, Petty and Wegener (2004) noted that a clear distinction must be made about the formation of attitude versus attitude change. They argue that cumulative research suggests it is more useful to consider attitude change initiatives to enable employee commitment. Factors involved in moving individuals with no attitude or weak but existent attitudes to adopt a more positive stance make this easier than trying to change or persuade individuals with strong initial attitudes (Petty *et al.*, 1993a in Petty and Wegener, 2004).



2.5 Desired attitudinal behavioural patterns for management and staff using application systems

The main question of this research (i.e. *what attitudinal behavioural patterns can users, in particular management and administrative support personnel, adopt to use the current EISAs effectively*) is addressed in detail in Chapter 5. It attempts to answer the question of what attitudinal behavioural patterns management and non-managerial administrative support staff can adopt to make optimal use of the current or possibly future ISAs. In Chapter 5, most of the lessons learnt during this research and throughout the lifecycle of the SEMS programme, are addressed in relationship to the objectives of this research. This research aims not only to report on perceived misbehaviour of resources, but also to provide input in the shape of

solutions on how to possibly avoid the recurrence of some of the reported issues outlined in this research.

2.6 Factors giving rise to employee attitudinal behaviour

In an attempt to answer the sub-question of what gave rise to the perceived attitudinal behaviour of certain employees who, while being part of the SEMS programme, at the same time still use the old ISA and EISA, the following themes is presented and described below. These themes were identified during this research into what gave rise to the perceived notion that the current EISAs are not being used optimally, according to the articulated tacit organisational benefits to be realised from using the integrated EISAs.

2.6.1. Staff composition

It is generally agreed that the critical success factor for any organisation to be successful in its relationship with its employees, is to ensure that the right people are in the right job, for the right reasons (Gartner ACIO, 2014). Furthermore, management teams must make the best use of their workforce talents and skills. Another important factor is to ensure that management in charge of recruitment or employee relations, ensures that the current and future workforce want to work for or at the organisation. According to the reviewed literature, management teams should create a climate of innovation at their organisations which stimulates better ideas and fosters a sense of ownership amongst employees. Lessons learned and taught in the past have suggested that from a people management principle point of view, the employees are and should be treated as the organisation's most valuable asset (Accenture, 2000; Gartner ACIO, 2014). Although the IOP charter of the University states that it should attract and retain excellent talent, the employees are not always treated in the same way as expected by various managerial styles. Contract staff is employed at nearly twice the Total Cost to Company (TCO) as compared to permanent staff. The latter have worked in some instances for more than two decades at the University, whilst the average length of time a contractor is employed by the University is two years.

Managers and executives often remark that what they need in their organisation is a 'complete change of attitude'. Generally, what it means is that the desired attitude changes should be on the part of their employees, of course, rather than themselves. If nothing changes in the procedures of the organisation, or the attitude of its management, employee attitudes will not change either (Grobler, 2014). Employee attitudes are largely a product of the environment in which they work. Accordingly, Grobler (2014) postulates that the environment which has the most influence on employee attitudes is the one inside the business. This is why an organisation's culture lies largely in the hands of management.

Managing people is the hardest job in the world (Grobler, 2014). The first mistake managers make is to adopt a management style, usually a style with which they are most comfortable, and secondly to arrogantly believe that they are entitled to it. He argues that managing people is about getting the best out of others and not about how you would like to go about it. He acknowledges that the lessons learnt are to determine two factors, i.e. determine if the person (employee) is able to perform a particular task(s) and what their attitude is towards doing what is necessary. Grobler (2014) posits that the ability of a person stems from the individuals level of training received, education and experience. Attitude, however he argues is made up from the basket of mental attributes, including enthusiasm, passion, courage, open-mindedness, willingness to learn and self-esteem. Therefore, it is very important to get your staff composition correct early on in your managerial career, taking ability and attitude of your resources into consideration.

2.6.2. Impact of information technology on employee behaviour

The reviewed literature suggests that Information Technology (IT) is dramatically changing the business landscape (Skyrme and Associates, 2014). They posit that organisational culture and business strategies shape the use of IT in organisations, whereas more often the influence is stronger the other way round. According to Melendez and Santana (2004: pp. 05), the IT industry has been seen as underestimating the value of intangible facets. The reviewed literature (Puth 2002: pp. 94; SGC, 2006) explains how large investments organisations made in technology in the past, have not benefitted the organisations which have wasted vast amounts of money, time and effort in trying to get the IT systems to work. Melendez and Santana (2004, pp. 05) augment this statement, explaining that IT professionals misidentified

their customers' needs in the business requirements identification phase of the engagement. This has resulted in the acquisition of unhelpful and overpriced products. Melendez and Santana (2004, pp. 05) continue that IT vendors are often criticised for providing vague scenarios and business cases, which do not clearly highlight the value of their services. These vendors sell IT assets and services that cause mistrust in the entire industry.

The lack of a national framework and vision concerning the role of ICTs in higher education have resulted in tertiary institutions relying on fragmented and disjointed policies that do not aid in setting up 'common denominators that could be applied across the system' (DOE, 1997: pp.74). Cross and Adam (2007), argue that while South Africa (SA) has made progress at schools level, it is at the tertiary level that it lacks a national framework and vision concerning the role of ICTs in higher education. This, in turn, results in the proliferation of different approaches in administering students' affairs across all tertiary institutions in SA. This is evident based on the interactions this author had with various Directors/CIOs of all 23 tertiary institutions in SA whilst attending the Association of South African University Directors of Information (ASAUDIT) conferences and seminars during 2012-2013 throughout SA.



There are voices in South Africa, in particular all members of ASAUDIT, arguing for serious consideration of a national policy framework. The collective knowledge of all participatory SA tertiary institutions in ASAUDIT is so vast that the policy makers of such frameworks do not have to look outside the boundaries of SA to find solutions. We have the expertise and willpower in SA to contribute and create a very comprehensive and effective national ICT policy framework for the higher education sector. SA tertiary institutions should not adopt regulatory frameworks with minimum standards or criteria; rather as Czerniewicz, Ravjee and Mlitwa (2006) argue, an adopted national policy framework is required with positive, open-ended principles for the long term. Broere, Geysers and Kruger (2002) suggest that the national framework needs to be less restrictive which will therefore aid tertiary institutions to be innovative in seeking solutions for implementing ICT enabled models.

The influence of IT on common traditions in a society has mainly been the effect of making information about them more accessible. According to the modern reviewed literature

(Meadowcroft, 2014), one of the aims of universities is to create information through research. Information technologies and methods have enabled researchers to access a wider source of information than previously available through such technologies as the Internet. The most relevant question though is whether the developments in information technologies have influenced the continuity of social attitudes, customs or institutions. The development of information technology has influenced the cultural continuity of general society (e.g. social attitudes or customs). Social attitudes have changed; for example, citizens of a society now expect the various elements of that society to be better informed than previously. They also expect to be able to access more information about a specific product, service or organisation so that they can make informed decisions with regard to their interactions with that entity (product or service) or the resources associated with that entity (organisation).

2.6.3. Lack of sound information technology project governance

The success or failure of an information system is directly related to end-users that either accept or reject the proposed information system (Liou and Chen, 2004). Whether we consider commercially available off-the-shelf (COTS) applications or developed ISAs, it is generally understood that if the users' needs are not met it means that the system has failed to deliver according to the end-users' expectations.

One of the most critical phases in software engineering is the solicitation of stakeholder requirements (Liou and Chen, 2004). According to some governance topics taught in the projects in controlled environments methodology (PRINCE2, 2009), clear distinction should be made about why a project is undertaken and what problem the intended project aims to solve. The PRINCE2 (2009) methodology further proposes that the project management team (PMT) must clearly spell out to the intended stakeholders what approach or approaches will be used to avoid known operational deficiencies, and how the COTS or developed ISAs will be supported over the long term when corrections, adaptations and enhancements are requested by the users of the ISAs. According to PWC (2010), project governance ensures that clearly defined objectives regarding time, cost, performance and quality enable the delivery of business benefits. The deeply entrenched mantra of project management (i.e. scope, time and cost) must be adhered to and a GAP analysis should be performed to

decrease the deficiencies between the current (“As-is”) ISA and the future (“To-be”) envisioned EISAs. These governance-related project issues are some of the questions posed in Chapter 4 in order to derive conclusive findings.

2.6.4. The use of open-source software

The available literature reveals variations in the implementation and successful use of open-source ISAs in the South African higher education sector. The variations reflect the variety in tertiary university organisational cultures and approaches including the varied learner communities served by the different tertiary institutions. Czerniewicz *et al.* (2006) conclude that most research on open-source initiatives in the higher education sector (South Africa) consists of case studies. They postulate that the groupings of these case studies are primarily operational and those that are research-driven. The operational case studies commenced with the implementation of established, widely researched tools and approaches.

Some of these initiatives are top-down driven by management at an enterprise (University) or faculty level as part of their strategic intent. However, research-driven case studies, structured as research projects, involve experimentation with new or unproven technologies and approaches and often these initiatives are bottom-up initiatives driven by non-managerial individuals. These research-driven or operational projects appear to address different concerns and give rise to different challenges in comparison to top-down strategic initiatives (Czerniewicz *et al.*, 2006).

Another viewpoint presented by Czerniewicz *et al.* (2006: pp.7) shows that broader issues of (open) source and content must be understood against the political imperatives of change in higher education. Their (ibid) report highlights debates about open-source technology and shows that the debates are deeply embedded in both political and pedagogical issues. Advocates of using open source or proprietary software in the higher education section tend to be only interested in the advantage and/or disadvantage of using this type of software developed solutions and/or products. In financially resource-constrained environments like the University, cognisance should be taken of whether public funds can be legitimately spent

on expensive proprietary software for use in public institutions, compared to Free and Open Source Software (FOSS).

According to Murphy (2015) open source software (OSS) is finding and making its mark in the most traditional of organisations. Some of the main reasons OSS is championed as an alternative for many resource-challenged organisations are, *inter alia*: (1) cost – OSS can improve efficiency thereby reducing cost; (2) attracting talent – a good way to attract innovative employees to resource-challenged organisations; (3) security – initially seen as a liability, the OSS communities have made huge improvements in this regard; (4) open standards – generally dictated by popularity; (5) pioneering – larger pools of talent working on newer product releases; (6) scalability – a huge benefit to any organisation that sees scalability as a major issue; (7) customisation – the ease of customisation to source code.

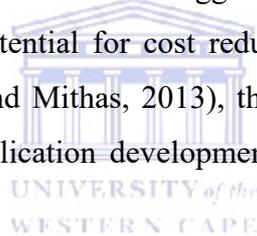
2.6.5. The use of proprietary software

According to Czerniewicz *et al.* (2006), higher education tertiary institutions (HETI) can make multiple choices between the types of software available to them for their ISA. HETI can choose between using licensed, proprietary COTS software or develop ISAs on an open-source software platform or develop or outsource their own home-grown ISAs. Czerniewicz *et al.* (2006)'s research of different levels of institutions, revealed that ownership of certain management systems is resting at department or faculty level rather than at the institutional level. With increased talk by senior managerial staff at the University of moving enterprise-wide ICT offerings towards, or more aligned with, the offerings of the digital era, the available choices would be impacted by decision-making managerial staff. The continued debate, in a resource-constrained environment, regarding the choice between proprietary software and Free and Open Source Software, is most likely to feature on various meeting agendas. The expensive and at times restrictive options associated with using proprietary software is forcing the leadership at the University to consider other options besides using proprietary software and/or products and whether it is financially or functionally viable to do so.

The reviewed literature surveys arguments as to why business should not use open source software (OSS). Rubens (2014) argues that choosing proprietary software makes better sense. He argues that OSS is free and can be customised at will. However, he cautions organisations about the security risks associated with multiple developers working on the same code fixing bugs randomly and making the outcome available to end-users of the product. He suggests making use of closed sourced proprietary software for usage in today's digital world with guaranteed support from reputable vendors.

2.6.6. Outsourcing of application development

Information technology (IT) has been an increasingly important phenomenon in recent times. Another equally important phenomenon is IT outsourcing, which refers to the use of third party vendor(s) to provide IT services that were previously provided by internal resources (Han and Mithas, 2013). Although the literature suggests that the majority of IT outsourcing considerations are based on the potential for cost reduction (Gartner ACIO, 2014; Global Industry Analysts (2011) in Han and Mithas, 2013), the leadership at the University based their decision to outsource the application development on the scarcity of internal skilled resources.

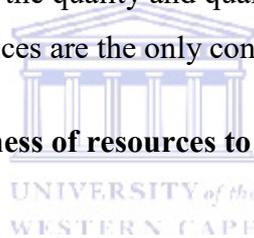


Aubert, Rivard and Patry (2004) posit that IT outsourcing can save organisations costs through increased efficiency in IT operation and effective use of IT staff, due to vendors' production cost advantage stemming from economies of scale. This view of cost saving is consistent with previous studies (Han and Mithas, 2013). They however argue that substantial hidden transaction costs associated with IT outsourcing such as transition and management costs, may outweigh the intended benefits.

Past studies (Barthelemy and Geyer, 2001 in Benamati and Rajkumar, 2003) suggested that IT outsourcing decisions tend to be made by individual executives. The academic literature on the subject has grown and few management practices have attracted so much attention as outsourcing. What is lost in the hype surrounding outsourcing is the fact that organisational boundaries in respect of its constraints can be adjusted in terms of economic pressures, changes to legislature or even just plain demand from its user/stakeholder base.

The attitude of the administrative support personnel linked to the development, maintenance and support of the current and future ISA at the University, is that they are aggrieved by the decision taken to outsource the development of the ISAs to external service providers. They argue that the University management is undermining their ability and preventing them from further developing and/or enhancing their business analysis (BA), project management (PM) and programming skill sets. The notion presented by some of them is that management followed the offshore concept where the work is done by foreigners or external service providers (vendors) instead of developing the internal resources and harnessing the working knowledge of a varied resource type at the University. According to some lessons learned from outsourcing application development (Raymondi and Dale, 2014), working with hired (outsourced) developers puts you at a disadvantage. These hired/outsourced developers spend and consume resources without really delivering much in the way of code development; coherent communication is missing; the quality and quantity of code is of a dismal proportion and the time-and-material bills/invoices are the only constant during the engagement.

2.7 Proficiency and resourcefulness of resources to use application systems



In an attempt to answer the sub-question regarding proficiency of resources, reviewed authors (Ajzen and Fishbein, 1980) and also Venkatesh and Davis (2000) suggest that not all elements of the product enjoy the same relativity in the expected performance of any IT system by end-users of the ISA. All product attributes as perceived by the end-users of the product, must be taken into consideration in order to fully comprehend the efficiency of any IT system. The outcome of this can at least ensure a concerted effort is undertaken to understand the inter-operability and complexity of all the models of the current ISAs being used at the University.

An integrated ISA allows different users to access the ISA from different locations and utilise the data for whatever their needs might be. According to Paterno and Mancini (2000) different levels of adaptation exist and can be identified as (i) *adaptable* systems which allow users to define some parameters and the system then adapt accordingly, and (ii) *adaptive* systems in which the system adapts to the user automatically. Adaptive systems take into

account the user's goals, preferences and interests and then present meaningful and most relevant information to the user. Applications that make use of adaptive systems exist in the area of educational hypermedia (Brusilovsky, Eklund, and Schwarz, 1997 cited in Paterno and Mancini, 2000), and these techniques might prove very suitable for the higher education sector as well. They could also be seen as recommended ways to ensure the ISAs at the University are used much more effectively and efficiently.

Effective utilisation of resources implies that certain aspects of what needs to be delivered and/or produced must be discussed and agreed upon with the respective employees allocated to such tasks (PRINCE2, 2009). What this means is that developing employees for such tasks must be managed by their respective line managers and regularly monitored for any deviations from the agreed plan in order to take corrective actions. International organisations that the author of this research has worked for (e.g. SIBM, Accenture, IQ Business etc.), prior to joining the University, stipulate that in order to provide a stable work environment which promotes career development, the organisation must provide an organisational and work climate which respects the dignity and worth of the individual. These organisations equitably reward their employees by providing equal opportunities and encourage initiatives and challenge individual capabilities. Some of the organisations therefore firmly believe that their employees are their most valuable resource.

2.8 Influencing user attitudes to support transitory system initiatives

In an attempt to answer the sub-question of this research regarding influencing user attitudes to support transitory system initiatives, the following acceptance determinants and elements are presented.

2.8.1. Determinants of intention and usage of IT

The fragmented theory and research on individual acceptance of IT has resulted in a unified theoretical research model by Venkatesh *et al.* (2003) with its main objective to capture the essential elements of eight previously established models. The eight previously established models which they researched are (i) the theory of reasoned action, (ii) the technology

acceptance model, (iii) the motivational model, (iv) the theory of planned behaviour, (v) a model combining the technology acceptance model and the theory of planned behaviour, (vi) the model of PC utilization, (vii) the innovation diffusion theory and (viii) the social cognitive theory.

By encompassing the combined explanatory power, conceptual and empirical similarities across the eight individual models (and their extensions) Venkatesh *et al.* (2003) formulate the Unified Theory of Acceptance and Use of Technology (UTAUT) model. They theorise that UTAUT is a definitive model that synthesises what is known, advances cumulative theory and provides some guidelines for future research in this area. The adapted UTAUT model is outlined in Figure 4.

Venkatesh *et al.* (2003) use the following factors in estimating the measurement and structural models in the preliminary tests of UTAUT; (i) Performance expectancy; (ii) Effort expectancy, (iii) Attitude toward using technology, (iv) Social influence, (v) Facilitating conditions, (vi) Self-efficacy, (vii) Anxiety, (viii) Behavioural intention to use the system

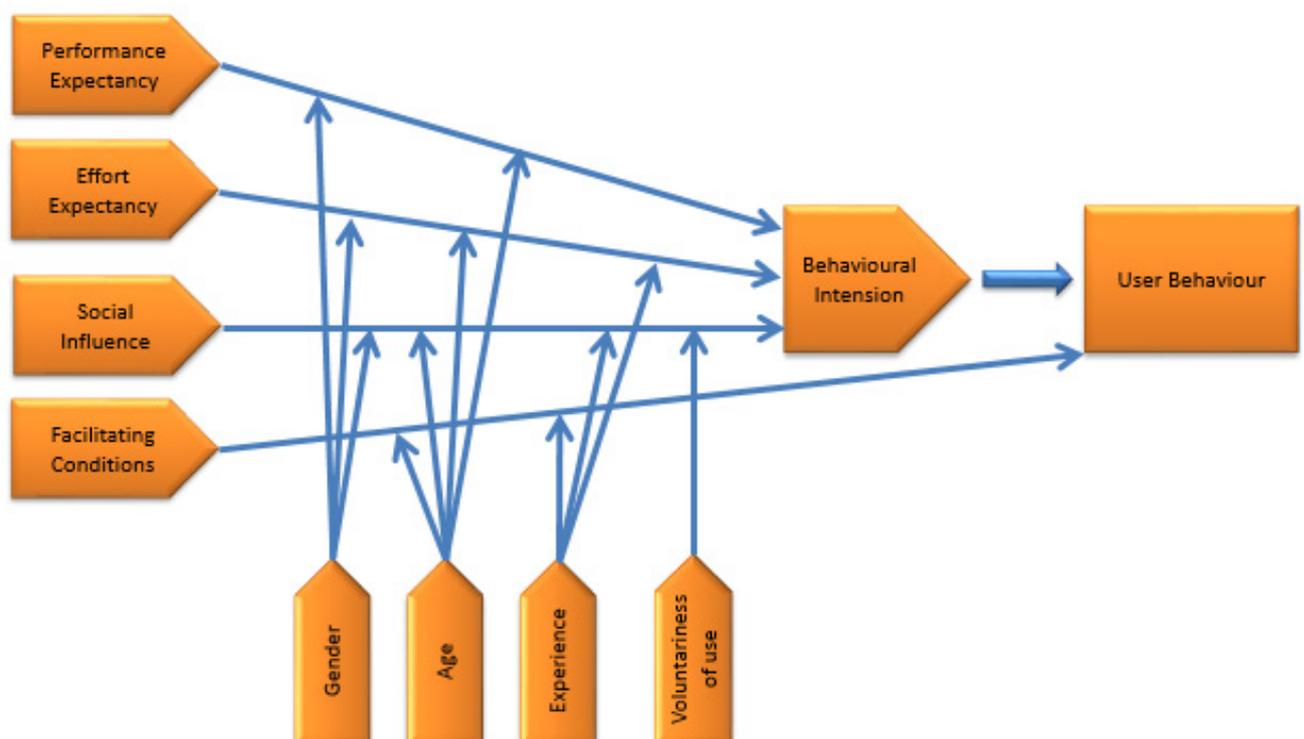


Figure 4: Adapted UTAUT model (Source: Author)

2.9 Acceptable behavioural patterns to use application systems

The types of power managers yield in some organisations may be segmented into two broad categories under the *stick* or *carrot* principle. The stick principle is a coercive power source in that it involves punishment or the threat of punishment. The non-coercive power source, the *carrot* principle on the other hand, involves rewarding expertise, i.e. it involves a willingness to yield to the power of another organisation due to the reward (*carrot*) offered (Lucas and Gresham, 1985). In recent years, the *carrot principle* has offered scientific proof of the power of recognition. Senior executives and managerial staff realise that they can make their organisations stronger, more productive and in this economic downturn, more profitable if they focus on their employees. They realise that credit must be given where it is due and they must acknowledge the work employees do. This initiative has resulted in some strategic initiatives like reduced staff turnover and more employee engagements being attained. It has been found that in certain locations of organisations where employee engagement is high, employee turnover is the lowest.

Franklin Covey has adopted the ‘carrot principle’ in his leadership training since 2008 (Gostick and Elton, 2007 pp. xi). The resonant chord about the *carrot principle* is that it changes the behavioural patterns of management who adopt this approach. By adopting this recognition philosophy, these managers can then apply it in their working environments and reap the intended benefits associated with the carrot principles. In some organisations, some managerial staff still ignore the importance of employee engagement and discard the notion as a soft business skill that does not pay dividends. Some managers do not believe recognition will work with their employees in their unique work culture. An alarming statistical figure, in excess of 70 percent, reveals that the global leadership do not practise recognition with their employees (pp. X11).

Gostick and Elton (2007) argue that three categories show the reasons why the adoption of recognition is so low, i.e. (i) negative, don’t care attitude (32 percent) leaders who do not believe in recognition, vehemently opposing it as being a ‘waste of time’, (ii) fearful (20 percent) leaders who instinctively lean towards recognition but are apprehensive of acting

without intervention and/or permission from their superiors, (iii) controllers (22 percent), leaders who show an inclination towards recognition but are overly analytical. They are 'nervous' of the imprecise aspects of recognition such as jealousy and inequities. It is found that only 26 percent of global leaders have adopted the power of recognition and have realized the intended benefits postulated by the theory of the 'carrot principle'.

The results of these findings indicate that those managers who adopt the recognition approach as postulated by the 'carrot principle', get better productive/participatory results from their reporting staff and they enjoy the highest trust from their employees. Those negative managers who have delayed and/or who have not adopted the recognition approach, on the other hand, have the smallest number of engaged employees and the lowest degree of trust amongst employees in the organisation (Gostick and Elton, 2007).

2.9.1. Elaboration likelihood model of persuasion

Petty and Wegener (2004) reason that contemporary persuasion theorists recognise that different processes can lead to attitude change in different circumstances. Some of these processes, they argue, require diligent and effortful information processing activity whereas others proceed with relatively little mental effort. The Elaboration likelihood model of persuasion (ELM) is based on the notion that people want to have correct attitudes and beliefs because these will normally prove to be most helpful in getting through life (Petty and Wegener, 2004). It is therefore not just sufficient for people, according to the principles of ELM, to simply generate thoughts, but they must use those thoughts when forming their opinions. If you think about your thoughts or revisit an initial idea before expressing yourself, according to Petty, Cacioppo, Strathman and Priester (1981), you are then engaged in metacognition. They argue that individuals would most likely express themselves if they think the thought or idea is sound. Their counter argument is that individuals would not express themselves if the thoughts or ideas do not meet their mental process of knowing, including aspects such as awareness, perception, reasoning, and judgment (cognitive approval). In other words, the individual would keep silent and keep their thought process to themselves.

According to the self-validation hypothesis (Petty, Briñol and Tormala, 2002), there are a number of determinants of whether or not people will have confidence in the thoughts they generate. They argue, for example, that if some ideas/thoughts are expressed to colleagues and they agreed with your ideas/thoughts (i.e. they validated them), you would be more likely to rely on those validated ideas/thoughts than you would if colleagues criticised them.

2.9.2. Cognitive Dissonance Theories of Balance

We can also change our attitudes through behaviour as expounded by the Cognitive Dissonance Theories of Balance (CDT). According to the reviewed literature, using CDT as the basis results in better understandings, *inter alia*, with regard to (i) the determinants of attitudes and beliefs, (ii) the internalisation of values, (iii) the consequences of decision made, whether correct or not, (iv) the effects of disagreement among individuals, and (v) other important psychological processes as highlighted by various research studies. Cognitive dissonance occurs when the individual acts in a way different from his/her beliefs. To deal with the uncomfortable feeling, the individual will either change his/her actions to be in line with his/her beliefs or change his/her beliefs to match his/her actions (Boyd, 2013).

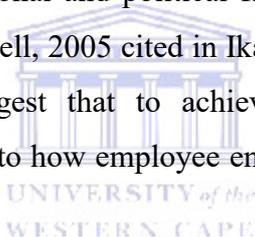
2.9.3. Heuristic/systematic model

The Heuristic/systematic model of persuasion (HSM), like the Elaboration likelihood model of persuasion (ELM), considers multiple processes of persuasion. However, the unique difference is that HSM processes many sources by means of cognitive heuristics that people have learned and observed based on past experiences (Petty and Wegener, 2004). They posit that HSM is the notion that people have learned and stored in memory various persuasion heuristics that are used to evaluate a message. The “sufficiency threshold” of HSM according to Petty and Wegener (2004) is when the likelihood of systematic processing increases whenever confidence in one's attitude drops below the desired level of confidence. The example used by (e.g. Chaiken, 1980; Petty and Wegener, 2004) suggests that, because of prior personal experience, people could base acceptance of a message on the expertise of the message sourced by retrieving the heuristic "*experts are usually correct*".

Petty and Wegener (2004) explain that HSM deals also with bias processing in two ways. By accessing the heuristic that “experts are usually correct”, people tend to engage in favourable elaboration of a message. They (ibid) term this the ‘accuracy motive’ which produces relatively objective processing of the message. The defense [sic] and impression motives on the other hand occurs when people are motivated to defend their existing attitudes but can do so either by biased systematic processing or selectively using heuristics (Eagly, Chaiken and Wood, 1996 cited in Petty and Wegener, 2004). Although considerable research supports the general predictions of the HSM and ELM, little research has addressed the defining feature of the HSM (Petty and Wegener, 2004).

2.10 Conclusion: Literature review summary

According to the reviewed literature, the underutilisation of IT in organisations has been linked to social, cultural, organisational and political factors (McBride, 1997; Ajayi, 2003; Arnott, Jirachiefpattana and O’Donnell, 2005 cited in Ikart, 2005). The argument put forth by Krueger and Killham (2006) suggest that to achieve a highly committed workforce, organisations need to gain insight into how employee engagement and commitment develops or fails in the work environment.



It is common knowledge that the motivations for attitudinal behaviour are often hidden, complex or obscure. This lack of certainty regarding reasons for the differences, contributes to our current lack of understanding of why certain cultural attributes affect planning, usage and implementations of IT solutions. One wonders then, what is the appropriateness of ISAs (useability) in a culture of mistrust. It would be an interesting notion to scratch beneath the surface in future research and challenge the motives behind what is apparent or not when it comes to employee attitudinal behaviour.

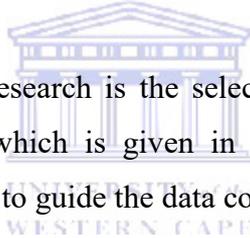
Despite its contributions to our understanding of the causes of employee behaviour, one of the limitations in the literature is that it is not yet informative as to how exactly dispositions affect employee behaviour (Erez, 1994). This is also confirmed by recent studies (e.g. Baumeister and Finkel, 2010; Petty and Krosnick, 2014). Therefore, researchers have begun to explore the psychological processes that underlie dispositional causes of employee

behaviour. Weiss and Cropanzano (1996) have suggested that disposition may influence the experience of emotionally significant events at work, which in turn influences employee behaviour. Similarly, Motowidlo (1996) and Brief (1998) have developed theoretical models in an attempt to better understand the relationship between dispositions and employee behaviour.

The limitations and constraints faced by the researcher during this research are aptly echoed by Ferguson (2007) when he stated:

‘The existence of different definitions makes the state of knowledge of employee engagement difficult to determine as each study examines employee engagement under a different protocol. In addition, unless employee engagement can be universally defined and measured, it cannot be managed, nor can it be known if efforts to improve it are working. This highlights the problems of comparability caused by differences in the definition of employee engagement’.

The next step (Chapter 3) in this research is the selection of a research methodology and deciding on the research design, which is given in the next chapter. Subsequently, the selected methodology has been used to guide the data collection and analysis.



Chapter 3: Research Design and Methodology

3.1 Introduction to this chapter

This chapter outlines the research design and methodology utilised in this research. It also outlines the motivation for the choice of methodology using literature review in Chapter 2 as a guideline. Starting with the motivation for the research methodology, the research approach, sampling design, the environment, data collection method, data analysis method as well as the validity and reliability of the research are provided.

This exploratory research attempted to explore the possible impact the introduction of EISAs had on some users in a number of comparable faculties and departments at a South African university, henceforth referred to as the University. Based on the limitations identified, only administrative officers and managers fulfilling a support role at the University were considered to be interviewed and conclusions and recommendations are based on interactions with these user groups. A total of 39 resources were interviewed as outlined in *Appendix A*, compared to the original 50 staff members that were carefully selected by the researcher.

In accordance with the identified work related problem and established research questions outlined in Chapter 1, **the main objective of this research was to investigate attitudinal behavioural patterns that management and staff can adopt to use the current EISAs effectively, and to propose certain improvement recommendations in this regard.** In order to produce meaningful recommendations, the researcher initially concentrated on two criteria, (i) efficiency and (ii) effective use of ISAs at the University. The other important factor to consider when it comes to the usage of ISAs, is to understand and examine the lived experience of the users involved (McCarthy and Wright, 2005). In this research ‘lived experience of users’ refers to the EISA which emanated from the SEMS programme at the University. McCarthy and Wright (2005) contend that cognitive information processes typically enquire about efficiency and effectiveness of performance, and although often crucial, such questions miss vital aspects of the lived experience people have with technology.

The objective of this research has been partially met by critically examining the existing literature on the behavioural patterns of users, in particular, their attitude and behaviour (employee behavioural patterns) and providing a reflective stance on existing debates and findings. As a result, this research addresses concerns about the lack of agreement on what employee (dis)engagement is and how issues surrounding it can be addressed. An understanding of these phenomena will inform whether management and staff must adapt their attitudinal behavioural patterns to support the transition to the EISAs and to effectively make use of the current and future features of ISAs at the University.

3.2 Motivation for the research methodology utilised

The qualitative approach of this research was guided by the nature of the examined phenomenon, i.e. examining the users' attitudes towards use of the system, which represents "soft issues" that cannot be explained by numbers of percentages. This is supported by the fact that research in information systems provides a rich scope of enquiry because of its multi-disciplinary and trans-disciplinary nature (Pather and Remenyi, 2005). This is because personal and social constructs have significant impact on the way technology is used (Mercer, 2001).

The qualitative phenomenological case study that is explored here takes place in a single organisational setting and is centred on the usage of an organisation wide EISA at the University. Initial detailed research as outlined in 1.3 and observation, indicates that the EISAs at the University are not being used as intended as a result of certain employee (user) perceived attitudinal behavioural patterns. This research captures the personal and professional lived experiences of users in an attempt to understand the cause of the perceived attitudinal behaviour in using the EISAs at the University which has resulted in the inefficient usage of the EISAs. The student administrative application system at the University is critical in the lifecycle of the student and also the officers responsible for administering these applications. Without a highly effective integrated application system supported by sound

infrastructure, the resources required to manually administer the student population at the University would need to be of a completely different quality and quantity.

This research is exploratory in nature, as the researcher first seeks to understand (Covey, 2004) by investigating and trying to infer, meaning to deduce (information) from evidence and reasoning rather than from explicit statements. The underlying causes of the perceived behavioural patterns are succinctly dealt with throughout this research. The outcome might inform whether management and support staff at the University must adapt their attitudinal behavioural patterns to use the current and future ISAs more effectively. Babbie and Mouton (2002:80) explain that exploratory studies attempt to better understand a phenomenon and provide a platform for future research. This research required people, who were subjected to and have practical experience of the EISA roll-out and usage thereof at the University, to be contacted and interviewed. People with relevant knowledge and experience in the IT industry were then also approached to gain a practical understanding of the concepts. This research reviewed literature relating to attitudinal behavioural patterns and the possible impact thereof.



3.3 Qualitative phenomenological inquiry approach

Information Systems research has generally shifted away from technological to managerial and organisational issues, with an increased interest in qualitative research methods. The nature of the research questions of this research posed a challenge as the softer factors surrounding the readiness of users (MASP) to adopt attitudinal behaviours to enrich their experience of EISAs was unknown. By attempting to find solutions to these unknown softer factors, the researched answers might ultimately lead to more efficient usage of EISAs at the University. Therefore, it was deemed more appropriate to use a qualitative research method to get the crux of the perceived problem from interviews. This motivated the researcher's choice to use the qualitative phenomenological inquiry approach. In addition, a number of comparable studies suggest that case study and qualitative research methodologies are more appropriate than others (Pather and Remenyi, 2005; Thompson, 2011).

This research focused on the lived experiences of users (MASP), therefore the researcher posits that a qualitative approach will provide the basis of enquiry. Phenomenology refers to the study of experience, or the lived processes involving the interpretation and meaning people attach to what they are going through (Trochim, 2000; Smith, Flowers and Larkin, 2009). This research design is based on qualitative methods. The reasons behind this choice are varied, and are presented in the two following sections.

A qualitative approach according to Pather and Remenyi (2005) best suits this type of research since understanding social data is not necessarily best arrived at using numerical and statistical methods. Denzin and Lincoln (2000:3 cited in Thompson, 2011) point out that qualitative researchers study things in the natural settings, attempting to make sense of, or to interpret the phenomena in terms of the meanings people bring to them. The common denominator (the perspective) that qualitative researchers and phenomenologists have in common, namely the lived experience of users, underlines the thrust of this research.

This research pursues a qualitative inquiry approach, due to the depth of information required for exploration purposes. To accomplish this, in-depth personal interviews are conducted to ensure the actual meaning of the information obtained, as this is seen as more valuable than being able to generalise it (Lindlof and Taylor, 2002:18). This research also explores ways that people make sense of their social worlds, as well as the way in which they express these understandings (Davmon and Holloway, 2002:5). This requires a degree of phenomenology, where Welman, Kruger and Mitchell, (2005:181-182) explain that phenomenologists attempt to experience the phenomena as the people involved experience them. Rather than subjecting and limiting the interviewees to a positivistic approach to inquiry, in the form of a quantitative survey, this research attempts to preserve and analyse the situation and content. By following this approach, in-depth interviews are conducted to experience the social action that users go through on a daily basis within a particular environment (Lindlof and Taylor, 2002:18).

In order to avoid prescriptive notions of users' attitudinal behavioural patterns that can be found in the literature and the risk of losing the essence of users' own interpretive meaning related to a satisfying experience with the EISA, the process of data collection does not refer

to constructs or factors of users' attitudinal behavioural patterns available from existing literature. The idea behind this research in adopting the IPA approach is that themes or concepts should emanate from users' own experiences, and then to proceed in establishing common connections with established constructs or factors from the literature.

It is to the extent that the researcher's experiences could be the users' experiences that the phenomenologist wants to be reflectively aware of this. To be aware of the structure of the researcher's own experience of this phenomenon may provide the researcher with clues for orienting himself to the phenomenon and thus to all the other stages of phenomenological research. In actual phenomenological descriptions one often notices that the author at times uses the "I" form or the "we" form. This is done not only to enhance the evocative value of a truth experience expressed in this way, but also to show that the author recognises both that one's own experiences are the possible experiences of others and that the experiences of others are the possible experiences of oneself. Phenomenology always addresses any phenomenon as a possible human experience; this is why phenomenological descriptions have an inter-subjective character.



3.4 Interpretive methods of research in information systems

Interpretive research has increasingly been viewed as an important approach to conduct information systems (IS) research (Clarke, 2000; Walsham, 1995 cited in Klein and Myers, 1999). Orlikowski and Baroudi (1991, cited in Navarra, 2006), estimate that the three most commonly used research methodologies in IS research are positivist, interpretative and critical, with the positivist approach being the most widely used. Positivism can be applied to isolate the whole into constituent parts, research can be conducted to test for casual relations and verify hypotheses based on any number of variables to support an empirical assumption of the 'whole'. The critical research paradigm aims to understand the range of possible ambivalence or contradiction consisting within a given reality. Interpretative research origins are derived from hermeneutical and phenomenological philosophical ways of interpreting a human experience within a particular social reality.

Roode (cited in Pather and Remenyi, 2005) recognizes that many important problems relating to the development, use and implementation of IS intimately concern people, and accepts that the social world presents a better stage to study these phenomena than the purely material world of technology. Moreover, this social world is accepted to be a human construction with many attributes that cannot be quantitatively observed and measured, and the interpretivist deliberately sets out subjectively to understand these constructs, often through active involvement, and never so-called objective, independent observation. He (ibid) argues that understanding is the main role of the interpretivist, and never prediction.

Klein and Myers (1999) claim that IS research is interpretive when the assumption is made that knowledge of reality is derived from social constructions such as language, consciousness, shared meaning, documents, tools and other artefacts. The interpretive methods of research in IS are, according to Marzanah (2009), aimed at producing an understanding of the context of the IS and the influence by IS or IS being influenced by the context. According to Husserl (1965 cited in Kelliher, 2005) interpretivists believe that reality is socially and not objectively determined. However, interpretive research is often criticized as lacking validity, reliability and ability to generalize (Kelliher, 2005).

Having looked at and considered the commonly used research methodologies in IS research (i.e. positivist, interpretative and critical), the researcher embraces an interpretive view, as opposed to a positivist view. This is because this research explores the way that users (MASP) make sense of their social worlds, as well as the way in which they express these understandings (Davmon and Holloway, 2002:5). This has been accomplished by identifying how users demonstrate their worth in a positivistically dominated student administration environment. As outlined above, this requires a degree of phenomenology which, according to Welman *et al.*, (2005), would attempt to experience phenomena as the people involved experience them. The length of the interviews has afforded the researcher the opportunity to attempt to understand how the participants of this research experience their environments. Rather than subjecting and limiting respondents to a positivistic approach to inquiry, in the form of a quantitative survey, this research aims to preserve and analyse the situation and content, and experience the social action that respondents go through on a daily basis, by conducting in-depth interviews (Lindlof and Taylor, 2002:18). The qualitative inquiry has

allowed respondents to speak freely about their experiences and helped identify how behavioural patterns of users (MASP) utilising the ISAs in general can be adjusted in the future to facilitate their daily efforts as administrative personnel at the University.

Interpretative phenomenological analysis (IPA) is concerned with examining the details to get to the main themes that will shed light or understanding on the person's experience. IPA draws from these strands/themes and establishes itself as being phenomenological in that it seeks to provide an insider perspective of the lived human experience, while in being interpretive it involves a double hermeneutic process, and that is the researcher on the one hand is trying to make sense of the participant, who in the process is trying to gain meaning or understanding of the lived experience, creating an ongoing hermeneutic cycle as both are involved in an interpretative process (Smith, Flowers and Larkin, 2009; Fade, 2004).

IPA supports data-driven theorizing and the data used in an analysis may come from structured one-on-one interviews, focus groups, questionnaires, experience diaries, and other qualitative methods of data collection. An IPA analysis typically involves 5 to 15 participants and includes a number of verbatim excerpts from the data. IPA may juxtapose the personal and cultural aspects of each individual's constructed existence (Chapman and Smith, 2002).

3.5 Case study as preferred method of choice

The research design created for this case study is based on two components. The *first* component is an exploratory literary review, designed to gain an understanding of the concepts incorporated in this research. The *second* component consists of the exploratory qualitative inquiry, approaching experts in industry to gain insight into the way they (subject matter experts) would address the perceived work-related problems highlighted in this research. Yin (2013) argues that case study research provides researchers with a degree of certainty or consensus as opposed to hypotheses.

For the above reasons this research will choose words over numbers; researcher involvement over observation; in-depth understanding over generalisations; and a small-scale study over population representation (Merrigan and Huston, 2004:5-6). Babbie and Mouton (2002:80) explain that a study following a qualitative inquiry will be open and flexible. The design strategy for this research will follow an emergent design, where the research will be open to adapting the instrument of inquiry as understanding deepens and/or situations change (Patton, 2002:40). Eschenfelder (2004) recommends a case study should be explorative when a phenomenon is being investigated.

3.6 Sampling design

In a qualitative inquiry, the sampling strategy is not based on procedures of random probability, where every element of the population has an equal and independent chance of being selected (Lindlof and Taylor, 2002:122). As a result, qualitative research cannot legitimately be extrapolated to the population from which they are drawn. Patton (2002:230) explains that purposeful sampling is central to the inquiry. In other words, researchers rely on their experience, ingenuity, and/or previous research findings to deliberately obtain units of analysis, which will add value to their study and represent the targeted population (Welman and Kruger, 2002:63). This research's target population (participants to be interviewed) is deliberately chosen, after investigating the literature, as well as identifying the resources who would afford value to the concepts of this research. Therefore, only administrative officers and managers fulfilling a support role at the University with considerable experience in the Higher Education sector are considered to be interviewed, and conclusions and recommendations are based on interactions with these user groups.

3.7 Participatory subjects

The participants interviewed during this research are outlined in *Appendix A*. A brief breakdown of the roles and responsibilities are outlined in Table 2.0. The total staff complement of the University at time of doing this research is in the region of 2,500 (two

thousand five hundred) employees. Only selected staff fulfilling a particular role as part of the SEMS programme and/or utilising the enhanced and old ISAs, are considered to be interviewed for this research. The participatory subjects of this research are further referred to as the interviewees in this research.

Table 2.0: Participatory subjects' summary

Role	Male		Female		Foreigner (Non-SA)	
	Count	Percentage	Count	Percentage	Count	Percentage
Executive	1	4%	1	6.25%	0	0%
Senior management	1	4%	1	6.25%	0	0%
Middle management	5	20%	0	0%	0	0%
Academic	5	20%	3	18.75%	4	80%
Administrative staff	10	40%	6	37.5%	0	0%
Technical staff (IT)	3	12%	5	31.25%	1	20%
TOTAL	25	100%	16	100%	5	100%

3.8 Designing the questionnaire

Elements of the UTAUT model outlined in Figure 4 and some of the sub-elements used during the preliminary test of UTAUT, have moulded/guided some of the interview questions posed to the participants of this research. The sub-element (questions) adapted from Venkatesh *et al.* (2003) which influence this research are further elaborated below.

Venkatesh *et al.* (2003), postulate that the **performance expectancy** construct within each of the eight individual models they have researched is the strongest predictor of intention (pp. 447). According to Davis-Blake and Pfeffer (1989, cited in Venkatesh *et al.*, 2003), the perceived usefulness of a system is the degree to which a person believes that their job performance would be enhanced if they are to use a particular system. In later research

(Venkatesh *et al.*, 2003 pp. 448) suggest users of the systems believe, *inter alia*, that the effectiveness of *on the job activities* would be enhanced if they use the system.

In previous research Thompson, Higgins and Howell,(1991, cited in Venkatesh *et al.*, 2003) postulate that **job fit** is defined as how well the capabilities of a system enhance an individual's job performance. Relative advantage, according to Moore and Benbasat, (1991 cited in Venkatesh *et al.*, 2003 pp. 449), is the degree to which using an innovation is perceived as being better than using its precursor, which as they argue, can enable the users to accomplishing tasks more quickly by using the system (innovation).

Outcome expectations relate to the consequences of the behaviour (Compeau, Higgins and Huff, 1999 cited in Venkatesh *et al.*, 2003: pp. 449). Based on empirical evidence, the consequences of behaviour are separated into job-related performance expectations and personal expectations, i.e. individual goals. Some of the outcome expectations identified by participants of their research indicate that if they use the system, they will spend less time on routine jobs and will increase their effectiveness on the job. However, from a theoretical point of view, Venkatesh *et al.* (2003) argue that *gender* and *age* are moderated by the relationship between performance expectancy and intention to use the system. Recent empirical studies outside the domain of IT research have shown that gender roles have a strong psychological basis and are relatively enduring, but subject to change over a period of time. Similar to gender, age is theorized to play a moderating role (Venkatesh and Davis, 2000).

The degree of ease in using a system is defined as **effort expectancy** according to Venkatesh *et al.* (2003). Previous research (e.g. Bem and Allen 1974; Bozionelos 1996), has suggested that effort expectancy is more salient for women than for men. Difficulty experienced in processing complex stimuli and in giving attention to on the job information is attributed to the *ageing* factor of staff members. Thompson *et al.*, (1991) define *complexity* as the degree to which a system is perceived as relatively difficult to understand and use and conclude that the user finds it difficult to understand what is going on in a perceived complex system.

The perceived importance some individuals place on using a new system because others would want them to use the new/enhanced system, is defined as **social influence** (Venkatesh

et al., 2003). They argue that social influence contains the explicit or implicit notions that the individual's behaviour is influenced by the way in which others analyse them as a result of having used and/or how the service and/or product is used. Their research highlights the complexity and contingent influences placed on the role of social influence in technology acceptance decisions. They identify the three attributes having an impact on social influence as (i) compliance, (ii) internalisation, and (iii) identification.

While internalisation and identification relate to altering an individual's belief structure, the compliance mechanism causes the individual to intentionally comply with the **social pressure of influence** (Venkatesh *et al.*, 2003). Prior research suggests that individuals are more likely to comply with others' expectations. It has been found that individuals respond favourably to the expectations of office bearers who have the ability to *reward* the desired behaviour or *punish* non-behaviour. They (*ibid*) find that these behavioural traits are evident in the early stages of an individual's career, when an individual's opinions and experience are relatively ill-informed.

Theory suggests that women tend to be more sensitive to others' opinions and therefore find social influence to be more salient when forming an intention to use new technology (Miller 2012; Venkatesh *et al.*, 2003), with the effect declining with experience (Venkatesh and Morris, 2000). As in the case of performance and effort expectancies, **gender** effects may be driven by psychological phenomena embodied within socially constructed gender roles (Lubinski, Tellegen and Butcher, 1983). Rhodes and Wood (1995)'s meta-analytic review of age effects conclude that affiliation needs increase with age, suggesting that older workers are more likely to place increased salience on social influences, with the effect declining with experience (Venkatesh and Morris, 2000).

Venkatesh *et al.* (2003) define **facilitating conditions** as the degree to which an individual believes that an organisational and technical infrastructure exists to support use of the system. It also includes aspects of the technological and/or organisational environment that are designed to remove barriers to use. The empirical evidence presented by Venkatesh *et al.* (2003) postulates that the relationships between intention and each of the constructs (perceived behavioural control, facilitating conditions, and compatibility) are similar. The empirical results also indicate that facilitating conditions do have a direct influence on usage

beyond that explained by behavioural intentions alone. The effect is expected to increase with experience as users of technology find multiple avenues for help and support throughout the organisation, thereby removing impediments to sustained usage (Bergeron, Rivard and De Serre, 1990 cited in Venkatesh *et al.*, 2003).

Venkatesh *et al.* (2003) point out that organisational psychologists have noted that older workers attach more importance to receiving help and assistance on the job. This is further underscored in the context of complex IT use given the increasing cognitive and physical limitations associated with age. These arguments are in line with empirical evidence from Venkatesh and Morris (2000). Thus, when moderated by **experience and age**, facilitating conditions will have a significant influence on usage behaviour (Venkatesh *et al.*, 2003).

3.9 Elicitation of behavioural aspects

A Phenomenological inquiry approach was adopted in order to elicit behavioural aspects of the participants of this research from their experiences. This approach was handled by conducting detailed interviews to capture users' daily experiences with EISAs. This same nature of this research led the researcher to selecting an interpretative (hence, interpretive phenomenological analysis) research approach to enable the researcher to make sense of the users view of the EISAs.

Babbie and Mouton (2002:273) explain that qualitative inquiries rely heavily on the researcher. The researcher becomes the important instrument in the research process, that '*gets close to the subject*', to gain insight into the respondent's perceptions. Moreover, the interviewer must be disciplined in knowing when to watch, listen, go with the action, reflect or intervene tactfully (Lindlof and Taylor, 2002:66). Only one interviewer, the author of this research, was used to conduct all interviews. Another reason for relying on one interviewer status is the unstructured nature of the questionnaire.

This research has therefore relied heavily on the interviewer to probe and uncover detailed information. By maintaining one interviewer, the information obtained in terms of depth

becomes consistent in purpose, especially as the researcher is knowledgeable about how to direct the questions, to elicit the additional information needed. Strategic questions are posed mostly to senior management and executives, whereas tactical and more operational questions are posed to middle managers, supervisors, team leaders and general administrative staff utilising the EISAs as part of their daily work duties.

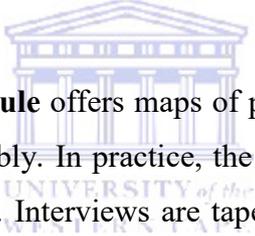
In past research mentioned by Thompson (2011), qualitative data is described as consisting of “*detailed descriptions of situations, events, people, interactions, and observed behaviours, direct quotations from people about their experiences, attitudes, beliefs and thoughts, and excerpts or entire passages from documents, correspondence, records and case history*”.

3.10 Data collection method

IPA is a qualitative research method for gaining an insight into how an individual perceives a phenomenon. The IPA data collection technique is similar in approach to grounded theory in that the researcher does not start the data collection with hypotheses already in mind. Instead, the data defines how the research question is answered. Unlike quantitative methods, IPA encourages an open-ended dialogue between the researcher and participants and may, therefore, lead to unforeseen answers, including a new perspective on the research questions. Chapman and Smith (2002), explain that IPA is a bottom-up, inductive approach, that avoids prior assumptions. The researcher begins by recruiting participants who have expertise with the phenomenon under study by virtue of it being an integral part of their life experiences.

IPA researchers wish to analyse in detail how participants are perceiving and making sense of things which are happening to them (the phenomenon). IPA therefore requires a flexible data collection method. While it is possible to obtain data in a number of ways (e.g. personal accounts, practical experience, recorded memoirs etc.), the best way to collect data for an IPA study, and the way most IPA studies have been conducted, is with the **semi-structured interview** approach. This allows the researcher and participant to engage in a dialogue whereby initial questions are modified in the light of participants’ responses and the researcher is able to probe interesting and important areas which arise.

This research followed the literature argument that phenomenological analysis was conducted based on four levels (Sanders, 1982) expounded by Thomas (2011). The first level was to have captured the participant's description of the phenomenon in the **taped interviews**. The second level **extracted themes** that emanated from the description, which then followed in the **development of correlates**, and finally **abstractions were formulated** from the participants' entire experience. Correlates are representations of the participants' perception of the phenomenon under consideration, revealed by their subjective reflections or quotations within each theme. The quotations embraced within these themes provide the rich quality of the participant's lived experience, substantiated by the authentic depth of their perceptions, which involved the researcher drawing abstractions to make sense of the participant's meaning-making process. This final process of abstraction was to formulate the essence of the whole subjective reflection or experience. The themes that have emerged provided the researcher's broad hermeneutical spectrum of the phenomenological reality of participants working in a hierarchical environment, such as the University.



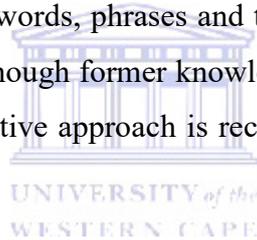
A **semi-structured interview schedule** offers maps of possible ways in which the interview may proceed, and is used very flexibly. In practice, the interview may diverge considerably from what was originally envisaged. Interviews are tape-recorded and transcribed verbatim. The transcripts are subjected to a detailed systematic qualitative analysis, case by case. The first transcript is read and examined a number of times and, with each reading, the researcher annotates the text with initial comments. The next stage involves transforming these comments into themes that capture succinctly the essential features of the initial readings.

Subsequently, connections are forged between themes until a coherent and organized thematic account of the case is produced. Connections across cases can be made until a set of superordinate themes for the group of respondents is produced. Each superordinate theme is connected to the underlying themes which in turn, are connected to the original annotations and extracts from the participant. Finally, the table of superordinate themes is translated into a narrative account, where the themes are outlined, exemplified and illustrated with verbatim extracts from the participants (Willig, 2001; Priest and Roberts, 2010).

3.11 Data analysis method

Content analysis is a method of analysing written, verbal or visual communication messages (Cole, 1988 cited in Elo and Kyngäs, 2010). When using content analysis, the aim was to build a model to describe the phenomenon in a conceptual form. Both inductive and deductive analysis processes are represented as three main phases: preparation, organizing and reporting. The preparation phase is similar in both approaches. The concepts are derived from the data in inductive content analysis. Deductive content analysis is used when the structure of analysis is operationalized on the basis of previous knowledge.

Content analysis as a research method is a systematic and objective means of describing and quantifying phenomena (Elo and Kyngäs, 2010). Content analysis allows the researcher to test theoretical issues to enhance understanding of the data. Through content analysis, it is possible to distil words into fewer content-related categories. It is assumed that when classified into the same categories, words, phrases and the like share the same meaning (Elo and Kyngäs, 2010). If there is not enough former knowledge about the phenomenon or if this knowledge is fragmented, the inductive approach is recommended (Lauri and Kyngäs, 2005 cited in Elo and Kyngäs, 2010).



The fact that both inductive and deductive content analysis do not suit this research led the researcher to choose the idiographic method of data analysis because it emphasizes the importance of the individual as a unit of analysis (Smith, Harré,, and Van Langenhove, 1995 cited in Eatough and Smith, 2008). An idiographic approach is committed to the detailed examination of a particular phenomenon as it is experienced and given meaning in the life-world of a particular person. The data generated by the interviews were analysed using Interpretative Phenomenological Analysis (IPA) as researched by Smith and Osborn (2003) and later by Thompson (2011). IPA is particularly well suited to the idiographic approach as it enables fine-grained and contextual analyses of the phenomenon under study or investigation.

3.12 Interpreting and analysis of data

Using the IPA technique, researchers would gather qualitative data from the individual using one of a number of techniques such as interviews or formation of a focus group. The responses given are then interpreted by the researcher to extract themes relevant to the research question. The technique is similar in approach to grounded theory in that the researcher does not start the data collection with hypotheses already in mind. Instead, the data defines how the research question is answered. For instance, IPA can be used to answer such questions as why people decide to smoke or what it is like to lose a lung as a result of smoking.

IPA is "phenomenological" because, rather than trying to make objective descriptions, it focuses on the uniqueness of an individual's thoughts and perceptions. Thus, it relies on a researcher's capacity to become immersed in the private world of each participant as a phenomenological insider. Nevertheless, IPA is "interpretive" because the researcher must also make sense of the participant's experience in a way that addresses a particular research question. Unlike quantitative methods, IPA encourages an open-ended dialogue between the researcher and participants and may, therefore, lead to unforeseen answers, including a new perspective on the research question.

Chapman and Smith (2002) postulate that IPA is a bottom-up, inductive approach, that avoids prior assumptions. The researcher begins by recruiting participants who have expertise with the phenomenon under study by virtue of it being an integral part of their life experiences. An IPA analysis is understood to be subjective, resulting from the participants and researcher's act of coming to terms with the phenomenon.

To reduce bias, IPA employs several methods of cross-validation, including cooperative inquiry and researcher, method, and analysis triangulation. Cooperative inquiry allows participants to agree with or challenge a researcher's interpretation. Researcher triangulation involves having different researchers approach the same issue and then compare their analyses. Method triangulation compares the results of different qualitative methods, while

analysis triangulation compares the results of different types of analyses. IPA has exhibited growing popularity among psychologists, especially those working in health psychology.

The IPA approach is useful in creating themes from analysing data matches with constructs or factors that are well known in research studies on a certain phenomenon. Using the IPA method, data is analysed by constructing content themes that emanate from a user's perceived experience in using information systems (Thompson, 2011). Chapman and Smith (2002) explain that IPA studies involve a detailed case-by-case analysis of individual transcripts. The primary aim of such studies is to examine in detail the perceptions and understandings of the specific group studied rather than make more general claims. This is not to say that IPA is opposed to more general claims for larger populations, it is just that it is committed to the prior activity of the painstaking analysis of cases. IPA researchers usually try and find a fairly homogenous sample. The basic logic is that if one is interviewing 10 participants as an example, it makes little sense to think in terms of random or representative sampling.

3.13 Themes structure formulation and evaluation

Smith *et al.* (2009) contend that individuals can offer a unique perspective on their engagement with phenomena; therefore, for this research the individuals (i.e. the participants interviewed) became the unit of study. The researcher began by identifying and recruiting participants who have expertise with the phenomenon under study by virtue of it being an integral part of their life experiences. An IPA analysis is understood to be subjective, resulting from the participants and researcher's act of coming to terms with the phenomenon. A semi-structured interview schedule with unstructured questions is initially developed by the researcher offering possible ways in which the interview may proceed.

The researcher opted for a flexible process i.e. the research questions should be geared more towards probing than leading the participants. By maintaining one interviewer, the information obtained in terms of depth became consistent in purpose, especially as the researcher was knowledgeable about how to direct the questions, which elicited the additional information needed. In practice, the interview may diverge considerably from what was

originally envisaged (Smith *et al.*, 2009). Interviews were tape-recorded and transcribed verbatim. The transcripts were subjected to a detailed systematic qualitative analysis, case by case. The first transcript was read, re-read and examined a number of times and, with each reading, the researcher annotated the text with initial comments. By placing the participant as the focus of analysis, the researcher listened, analysed and compared what was said to observed notes made by the researcher during the interviews. Another aspects of the focus of analysis of all participants was the observation of certain behavioural patterns e.g. mannerisms like body language, tone of voice, emotional attitudes etc. The next stage involved transforming the comments into themes that captured succinctly the essential features of the initial readings.

According to (Shinebourne, 2011), Interpretative Phenomenological Analysis (IPA) draws on the theoretical approaches from three key areas of philosophy of knowledge (i.e. phenomenology, hermeneutics and idiography) to inform its distinctive epistemological framework and research methodology. Data was analysed by constructing content themes that emanate from a user's perceived experience in using information systems as espoused by Thompson (2011). This research's process of enquiry was informed by the philosophical strands/themes of hermeneutics and phenomenology that underpin IPA. The researcher has identified and defined the themes within this research, in the hope of remaining faithful to the sense of meaning making in each participant's account, while also keeping in mind the point of convergence (i.e. the original focus) of this research. Themes developed through IPA have enriched the meaning of the overall research question of this research. The identified themes are expounded in Chapter 4.

3.14 Conclusion

The researcher's choice to use the qualitative phenomenological inquiry approach culminated in addressing the two components outlined above (i.e. exploratory literary review and exploratory qualitative inquiry) which focused on the lived experiences of users (MASP) utilising ISAs at the University as part of their daily work activities. The author also recognises that one's own experiences are the possible experiences of others and that the

experiences of others are the possible experiences of oneself. Although the researcher was the one doing the analysis during this research, the understanding remained that the participant who was undergoing the experience was the one who created the experience (Geven, Schrammel and Tscheligi, 2006).

The researcher had to reflect on his own perceptions, conceptions and processes that may have had an influence on this research. In Chapter 4, a detailed analysis is undertaken of the themes identified and the results derived from it, (i.e. it outlines the findings of the analysis/research conducted throughout this research).



Chapter 4: Research findings and interpretation

4.1. Introduction to this chapter

The objective of this chapter is to interpret the empirical findings of the literature reviews and also to produce an overview of the findings of the interview process with participants (i.e. the interviewees) of this research. The data collection process was guided by the statement *'qualitative researchers are guests in the private spaces of the world. Their manners should be good and their code of ethics strict'* (Stake, 2000 cited in Eatough and Smith, 2006). Enhanced information system applications (EISAs) offer the promise of inclusion, yet they often fail to reach this ideal at the University.

4.2. Interrelated factors for adoption

The interrelated factors for adoption discussed in this section address sub-question 1 of the main research question (section 1.4 Research question and sub-questions). Interrelated factors essential to users in adopting attitudinal behavioural patterns to ensure more effective and efficient usage of EISAs at the University are **outlined** below.

Employee engagement is consistently shown as something given by the employee which can benefit the organisation through commitment and dedication, advocacy, discretionary effort, using their talents to the fullest and being supportive of the organisations goals and values (ISR, 2004; Robertson-Smith and Markwick, 2009). Engaged employees feel a sense of attachment towards their organisation, investing themselves not only in their role, but in the organisation as a whole.

It is argued by Venkatesh *et al.*, (2003), that **user participation** is a critical determinant of information systems' success to the extent that it influences beliefs that lead to users' attributions for information systems related outcomes, and ultimately to their subjective evaluation and future use of ISAs. Despite an emerging consensus that context does matter, IT specialists, in particular outsourced external IT service providers, still tend to seek

universal formulae for local practices, while ignoring or downplaying the complexity of human interpersonal factors in different working environments which they operate from. Lack of a proper understanding and/or the will to understand the prevailing culture at any engaging organisation, is a good recipe for disaster (INT #38).

Employee Communication can support employee engagement by simply asking employees how they feel and this principle can be applied to one-on-one relationships to build trust and to foster personal relationships with one's employees. It can also apply to organisations through the use of well-designed communication tools and techniques. The key in any communication is to remain consistent, to make employee communication a regular routine, and to honestly respond to what one hears from employees (Bates, 2004). Similarly, Thomas (2004) states that management needs to demonstrably value employee feedback where employees are listened to without fear of reprisal.

According to Wayne, Shore and Liden (1997), employees through the organisation's **Rewards and Recognition** policy perhaps considered promotion to a higher position associated with an increase in salary, as the best way by which an organisation could recognize employees' accomplishments. Besides that, Vaziarani (2007) argues that an organisation should have a proper pay system so that the employees are motivated to work in the organisation. He argues that in order to boost the engagement levels of the employee, an organisation should be able to provide employees with certain benefits and compensation.

Employee Development refers to the degree to which an employee feels that specific efforts are being made by the company or manager to develop the employee's skills (Baumruk, 2004; Towers Perrin, 2005-2007). Through employee development programs such as training, an organisation can help new and current employees acquire the knowledge and skills they need to perform their jobs.

4.3. Main theme 1: Desired employee attributes

This main theme addresses sub-question 1 of the main research question (section 1.4 Research question and sub-questions). The literature review in Chapter 2 provided the researcher with insight from Ikart (2005), Day (2007), Rogelberg *et al.* (2010) and Thompson (2011), especially their studies, *inter alia*, on user satisfaction in certain information systems. In line with their work, this research arrives at the conclusion that user satisfaction is a personal issue that involves many facets (Thompson, 2011). A convergent framework derived from the literature of user satisfaction research (Day, 2007, Rogelberg *et al.*, 2010) is used as a baseline for this research, from which emerged the perspective that user attitudinal patterns could be studied from dimensions making up a person's lived experiences. In this respect elements of a person's lived experiences coupled with the interrelated factors for adoption discussed above, form part of the determinants defining user attitudinal patterns that the research question seeks to address:

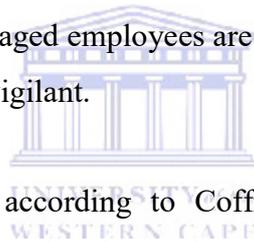
What attitudinal behavioural patterns can users (management and administrative support personnel) adopt to use the current EISAs effectively?

According to Coffman (2002) there are three groups of employees. The *first group* is the actively "Engaged Employees" who are passionate about their work, have a sense of personal commitment to what they do and feel towards their company. These employees would go beyond the boundaries of their job requirement and are instrumental in moving the organisation forward. In addition to that, other studies refer to the "Engaged Employee" as a builder (Vazirani, 2007 cited in Suan, 2009). Such employees want to know the desired expectations for their role so that they can meet and exceed them. Engaged employees perform at consistently high levels; they want to use their talent and strengths at work every day; they work with passion and they drive innovation and move their organisation forward. An engaged employee is a person who is fully involved in, and enthusiastic about, his or her work (Seijts and Crim, 2006).

Some of us have been working here at the University for more than 2 decades (INT #33) and we love what we doing and are very passionate about our work (INT #34). In actual fact it is all that we know how to do and do it well (e.g. administering new

intakes), especially the students who just completed matric (INT #35). We feel they (the 'greenies' directly translated from the Afrikaans word 'groenetjies') need our help the most, and they at times want to be treated as either their 'mother or father' when they need help. For some of us this is very gratifying (INT #34).

In the earlier work done by Rutledge and McKinsey (cited in Seijts and Crim, 2006) their findings are in congruence with what the researcher found during some interviews held with users directly associated with and performing student administration duties. Engaged employees care about the future of the organisation and are willing to invest the discretionary effort, exceeding duty's call, to see that the organisation succeeds. Rutledge (cited in Seijts and Crim, 2006) urges managers to implement retention plans so that they can keep their top talent. This view is also supported by earlier research (McKinsey Inc, 1998 cited in Seijts and Crim, 2006). They argue that an emerging trend of shortage of skilled employees was already visible in 1998. According to Seijts and Crim (2006) there is widespread agreement among academics and practitioners that engaged employees are those who are emotionally connected to the organisation and cognitively vigilant.



The *second group* of employees according to Coffman (2002), is the “Non Engaged Employees” who have no energy in performing their work. Vazirani (2007) on the other hand posits that “Non Engaged Employees” tend to concentrate on tasks rather than the goals and outcomes they are expected to accomplish. They want to be told what to do; they just do what they can do and continue with the same task till they finish. They focus on accomplishing tasks versus achieving an outcome (ibid).

The *third group* of employees according to Coffman (2002), is described as “Actively Disengaged Employees”. These employees constantly go out of their way to let everyone know that they are unhappy and they try to influence the so-called *engaged employees* into becoming *disengaged employees*. Vazirani (2007) describes this group of employee as the “cave dwellers” who are “consistently against virtually everything”. They are not just unhappy at work; they are busy acting out their unhappiness and sow seeds of negativity at every opportunity. Suan (2009) finds that as workers increasingly rely on each other to

generate products and services, the problems and tensions that are fostered by actively disengaged workers can cause great damage to an organisation's functioning.

4.4. Sub-theme 1-1: Resource proficiency

This sub-theme addresses sub-question 1 of the main research question (section 1.4 Research question and sub-questions):

What has given rise to the perceived attitudinal behaviour and what are the results associated with this phenomenon?

At least 40 percent of the participants interviewed for this research do not hold any formal qualifications. At least 20 percent of the interviewees are near retirement age. They started working at the University immediately after school and have not left. This is their first and most probably their last place of employment. Student administration, especially undergraduates, is what most of them have been doing for years. They have seen people and systems come and go, but according to them, the student who just enrolled, changed the most. Gone are the days when students want to study at this previously disadvantaged 'Bush College' (INT #20). 'Students now have choices and we the administrators must cope with this student attitude' (INT #20; INT#32; INT #31). In order to make sense of what has given rise to the perceived attitudinal behaviour of users and the kind of results associated with this phenomenon, the following data emerged from the interviews:

Certain users was excluded from the SEMS process because they were thought of as being a 'Hindrance' (INT #38); some staff were found to be 'not co-operating' (INT #39); did not see things their (SEMS) way (INT #4); some ICT managers were deemed not skilled enough and even their aptitude was tested (INT #36; INT #37); The executive in charge of the SEMS programme concluded that the original idea to develop the EISAs using FOSS was not a good option and/or fit for the University and that other options should be looked at (INT #3; INT #4; INT #5).

The Student enrolment management system (SEMS) project team have developed software in a controlled environment to their advantage, but to the disadvantage of the University's ICT technical staff who are supposed to maintain and support the applications after hand-over (INT #3). This approach has resulted in the administrative users of the EISAs including the ICT support teams being forced to do 'catch-up' (INT #3). Knowledge transfer is packed/forced in such a way that the ICT staff "are spinning as a result of information overload" and the times allocated for the ICT support teams to grasp all the new functionalities of the EISAs are too short (INT #7; INT #10; INT #11; INT #12).

The SEMS external management team pushed through their deliverables in the latter part of 2012 in order to meet the deadlines imposed upon them by the Finance department at the University. The outcome of this was that the hand-over schedule presented to the University's SEMS steering committee had to be absorbed by the ICT support department at all costs. On the occasions when the ICT support team could not cope with the hand-over schedule while also concentrating on other issues in the production environment, the SEMS manager would profess to the University's senior management that they (ICT support staff) could not cope with the workload. This then leads to the entrenchment of the previously stated comments by the SEMS programme manager that, *'the ICT department does not have the capacity to maintain/develop/support the EISAs in the future'*. This then, she argues is a 'good reason why the University executives should consider the commercialisation of the core student administration system and the complete outsourcing thereof to the service providers who have participated in the development of the SEMS products.' (INT #2).

Users of the EISAs at the University are told that the EISAs would, *inter alia*, 'improve the quality of their work' and 'assist in solving student queries' to the advantage of the end-user of the ISAs (INT #3; INT #38; INT #39). Therefore, in order to use the EISAs a certain degree of proficiency is implied which leads to addressing sub-question 2 of this research:

Is the proficiency (i.e. the current knowledge base, skill set and attitude) of our users (management and administrative support personnel) sufficient to handle the outsourced EISAs effectively?

Learning through knowledge transfer takes place in the zone of complexity, where relationships between items of knowledge are not predictable or linear. Learning which builds capability takes place when individuals engage with an uncertain and unfamiliar context in a meaningful way. Those of us who recall trying to prepare for do-it-yourself household jobs by reading the textbook beforehand will know that capability cannot be taught or passively assimilated: it is reached through a transformation process in which existing competencies are adapted and tuned to new circumstances. Capability enables one to work effectively in unfamiliar contexts.

At times we felt that we were coerced into accepting an end-result (INT #25; INT #26; INT #27; INT #37). Some members of the SEMS programme team members (SPTMs) was very intolerant and used strong persuasion tactics to coerce us into accepting the deliverables (INT #4). The autocracy attitude of the SEMS programme manager was having a negative effect on certain middle and senior managers who also felt coerced in accepting (signing off) deliverables (INT #37; INT #4). Being absent in the initial and subsequent decision making sessions, these managers felt marginalised and isolated. 'Take note that this new system is very complicated and the integration of some of the modules makes it also very complex. The old system was much easier to understand and use' (INT #1; INT #3).

For example, suppose a staff member who receives learning through knowledge transfer is doing support on a query with regard to the new business rules of the National Benchmark Test (NBT). The NBT task has changed from the typical user manual referral/check requiring merely competence (familiar task in a familiar environment) to a complex support role testing the resource's capability (somewhat unfamiliar task in a somewhat unfamiliar environment). The support staff person best able to cope with this is one whose training provides continual opportunities to be stretched by the uniqueness of each context, where knowledge has to be applied in ways the business process/rules do not anticipate, and where "expertise" is seen as the ability to access knowledge and make connections across seemingly disparate fields and life experiences.

In complex adaptive systems the behaviour of the individual, and therefore of the system of which they are part, evolves in response to local feedback about the impact of actions. Similarly, the basis of transformational learning is the information that is fed back to the learners about the impact of their own actions and those of others. An education process that provides feedback about performance as it takes place will enhance capability. One such initiative based on feedback at the University is the pre- and post-registration process, where users (MASP) in a peer group state their registration needs, discuss ways forward, take action, and then report back on the feedback from the action. Reflective learners are receptive to feedback and able to adapt appropriately, while poor learners are either unreceptive to feedback or they adapt inappropriately. Reflective learners transform as the world around them changes: poor learners simply complain about it (Fraser and Greenhalgh, 2001).

The literature does not suggest that ISAs must be changed to accommodate varied levels of user proficiency; instead underpinning many Human Resource Management (HRM) policies is the proposition that organisations need to develop and retain a highly committed workforce (Coopey and Hartley, 1991; Guest, 1992; Seijts and Crim, 2006; Devi, 2010). As changes to business processes and strategies take place, so does the need to improve (enhance) or develop new information systems (Hoorn, Konijn, Van Vliet and Van der Veer, 2006). Several procedures, methods and approaches guide the software development process to promote product correctness and quality guidance during the development of such products (Arthur and Gröner 2004). However, Arthur and Gröner (2004) have countered that no matter how thorough the software development process, the system might not perform as the customer intended.

However, there is a small but growing literature relating to the pre-existence (antecedents) of employee attitudinal behaviour in the adaptation of ISAs. An emotionally committed and engaged employee is willing to put discretionary energy into his/her work freely (Risher, 2003). Emotional commitment is visible in the form of hard work and belief in the goals of the organisation (Risher, 2003). “Those two actions, intentional engagement and discretionary energy, are evident whenever someone works hard to accomplish something, ...” (Risher, 2003, p. ii).

The obverse is that actively disengaged employees, those employees fundamentally disconnected from their jobs, can contribute to a decline in an organisation's financial well-being (Seijts and Crim, 2006). The current mandate of the National Student Financial Aid Scheme of South Africa (NSFAS) is to make a difference in South Africa by providing a sustainable financial aid system for study loans and bursaries, allowing academically deserving and financially needy students to realise their potential and hopes for the future. As an example, if the users (MASP) utilising the EISAs as the enabler to action these NSFAS bursary applications are actively disengaged from their work, then the students will not benefit from this service which NSFAS has made available to all students on a national basis.

4.4.1. Sub-theme 1-2: Capability and competence

This sub-theme addresses sub-question 2 and sub-question 3 of the main research question. Capability is more than competence (Fraser and Greenhalgh, 2001). They argue that competence is what individuals know or are able to do in terms of knowledge, skills and attitude. Capability on the other hand, describes the extent to which individuals can adapt to change, generate new knowledge, and continue to improve their performance. They postulate that traditional education and training largely focuses on enhancing competence (knowledge, skills, and attitudes). In today's complex world, they argue that we must educate not merely for competence, but for capability i.e. enabling the ability to adapt to change, generate new knowledge, and continuously improve performance. Capability is enhanced through feedback on performance, the challenge of unfamiliar contexts, and the use of non-linear methods such as story-telling (as an example) and small group, problem based learning. Education for capability must focus on process, supporting resources to construct their own knowledge acquisition goals, receive feedback, reflect, and consolidate, and avoid goals with rigid and prescriptive content.

The data analysed during the interview process suggests that the number of female participants felt much more at ease and confident in using the EISAs, compared to their male counterparts. Some female participants however felt that if given more time and training, they would eventually come to grips with this '*new way of doing student administration at the*

University' (INT #14; INT #15; INT #16; INT #22; INT #22). Some male participants (INT #38; INT #4) however felt the system is 'useless' and 'too much money was spend' on an end product that must still be 'tweaked' to conform to the culture of student administration at this institute.

4.4.2. Sub-theme 1-3: Knowledge transfer

This sub-theme addresses sub-question 4 of the main research question:

How do we influence user attitudes to overcome the perceived behavioural patterns to support the transition to the EISAs?

The bulk of the interviewed users of the EISAs, hold the majority opinion that '*too much was expected of them in too short a timeframe to fully understand the different EISAs*' and also still do their normal '*business-as-usual tasks*' as expected from their line management (INT #27; INT #28; INT #29; INT #39).

Learning and adapting (own focus) to how things are interconnected is often more useful than learning about the pieces of a solution and/or product. Traditional curriculums, based on a discrete and simplistic taxonomy of disciplines that focus on the acquisition of facts, usually highlight content without helping learners understand the interrelationships of the parts. Without this understanding of the interactions and relations between the pieces it is difficult to apply the learning in a unique context (Fraser and Greenhalgh, 2001).

The complex real world is made up of messy, fuzzy, unique, and context embedded problems. Context and social interaction are critical components of adult learning (Fraser and Greenhalgh 2001). Adults need to know why they need to learn something and they learn best when the topic is of immediate value and relevance (Knowles, 1984). This is particularly true in changing contexts where capability involves the individual's ability to solve problems, to appraise the situation as a whole, prioritise issues, and then integrate and make sense of many different sources of data to arrive at a solution. Problem solving in a complex environment therefore involves cognitive processes similar to creative behaviour (Langley, Simon,

Bradshaw and Zytchow, 1987). These observations are directly opposed to the approaches employed by the SEMS programme team members responsible for delivering the outcomes of the EISA in continuing education for information technology professionals. The predominant focus is on planned, formal events, with tightly defined, content oriented learning objectives. Very little focus is placed on the post production support and maintenance environments and therefore **knowledge transfer** to the University support staff has been grossly neglected. No clear user adoption strategy is in place at the University to facilitate the user adoption process from the previous ISA to the new one (EISA).

Pedagogical research has shown that adults choose to learn because they want to change. The process of developing new behaviours in the context of real life experiences enables individuals to adapt to or co-evolve with new situations, thereby supporting the transition from individual competence to personal capability (Hite, 1999). According to the reviewed literature (Fraser and Greenhalgh, 2001; Greenhalgh, Robert, Macfarlane, Bate and Kyriakidou, 2004), complexity concepts applicable to information systems in education and training entail the following:

- Neither the system nor its external environment are, or ever will be, constant
- Individuals within a system are independent and creative decision makers
- Uncertainty and paradox are inherent within the system
- Problems that cannot be solved can nevertheless be “moved forward”
- Effective solutions can emerge from minimum specification
- Small changes can have big effects
- Behaviour exhibits patterns (that can be termed “attractors”)
- Change is more easily adopted when it taps into attractor patterns

According to Fraser and Greenhalgh (2001), some of the **process-oriented learning methods** which can be used to address the varied levels of proficiency in the adaptation of new and/or enhanced systems include, (a) Informal and unplanned learning, (b) Self-directed learning and (c) Non-linear learning. The use of process techniques is the crucial distinction between learning which has a flexible and evolving content, and learning which is simply disorganised and is unstructured, disjointed, and driven only by convenience or coincidence.

When process techniques are used, learning is driven by needs and is characterised by a dynamic and emergent personal learning plan with explicit goals, protected time for reflection and study, mentoring or peer support, and perhaps a written learning log or record of achievement. Process oriented techniques such as those listed above provide boundaries for the learning and the opportunity for prompt and relevant feedback from those imparting knowledge (ibid).

4.4.3. Sub-theme 1-4: Social exchange

This sub-theme addresses sub-question 4 of the main research question.

How do we influence user attitudes to overcome the perceived behavioural patterns to support the transition to the EISAs?

A basic principle of the social exchange theory (SET) is that relationships evolve over time into trusting, loyal, and mutual commitments as long as the parties abide by certain 'rules' of exchange (Cropanzano and Mitchell, 2005). Such rules tend to involve reciprocity or repayment rules, so that the actions of one party lead to a response or actions by the other party. For example, when individuals receive economic and socio-emotional resources from their organisation, they feel obliged to respond in kind and repay the organisation (ibid). This, according to Robinson *et al.* (2004), is consistent with the description of engagement as a two-way relationship between the employer and employee. Robinson *et al.* (2004) point out that the key driver of employee engagement is a sense of feeling valued and involved, which has the components such as involvement in decision making, the extent to which employees feel able to voice their ideas, the opportunities employees have to develop their jobs and the extent to which the organisation is concerned for employees' health and well-being.

SET tends to provide a theoretical foundation to explain why employees choose to become more or less engaged in their work and organisation. In terms of Kahn's (1990) definition of engagement, employees feel obliged to bring themselves more deeply into their role performances as repayment for the resources they receive from their organisation. When the organisation fails to provide these resources, individuals are more likely to withdraw and

disengage themselves from their roles. Thus, the amount of cognitive, emotional, and physical resources that an individual is prepared to devote in the performance of his/her work role may be contingent on the economic and socio-emotional resources received from the organisation (Saks 2006). Bringing oneself more fully into one's work roles and devoting greater amounts of cognitive, emotional, and physical resources is a very profound way for individuals to respond to an organisation's actions (Suan, 2009).

Employee engagement involves an emotional and psychological connection with an organisation and its people which can be translated into positive or negative behaviour at work. The organisation and its environments play a leading role in shaping employee attitudes and the state of engagement (Suan, 2009). The suggestion has been made by the likes of Holbeche and Springett (2003); Devi (2010) that people's perceptions of 'meaning' with regard to the workplace are initially clearly linked to their levels of engagement and their performance in the workplace. The meaning concept can therefore be closely linked to the loyalty the employee feels towards the organisation. They argue that if organisations do not attempt to provide a sense of meaning in the workplace, then employees are likely to quit if they can't find active meaning through their work. Their research findings suggest people place more emphasis on the importance of 'meaning' in the workplace than in general life. This may be explained as a result of employees spending longer hours at work than on other parts of their lives. They (ibid) posited that high levels of engagement can only be achieved in workplaces where there is a connection between the emotional level and personal aspirations of people in a working environment conducive for providing a shared sense of destiny and purpose that connects them.

Penna (2007) researchers have come up with a new model they called "Hierarchy of engagement" which resembles Maslow's need hierarchy model. In the bottom line there are basic needs of pay and benefits. Once an employee satisfies these needs, then the employee looks to development opportunities, the possibility for promotion and then leadership style will be introduced to the mix in the model. Finally, when all the above cited lower level aspirations have been satisfied the employee looks to an alignment of value-meaning, which is displayed by a true sense of connection, a common purpose and a shared sense of meaning at work.

Gartner ACIO (2014) make a clear distinction with regard to “people being *at* work or people being *in* work or people being *on* work” They posit that the amount of time people spend at work does not necessarily mean they are ‘at work’. Their research indicates confusion when it comes to differentiating between whether people are ‘in or on work’. They postulate ‘in work’ refers to the amount of time people spend time in their operational areas, whereas ‘on work’ is what they suggest executives and senior managers should do. They posit that the latter resources should spend less time ‘in work’ and spend more time ‘on work’. The latter refers to more strategic and visionary work for the organisation, their peers and with the staff (Gartner ACIO, 2014).

The literature review indicates that there are more employees who are disengaged or *not* engaged, than there are engaged employees (Gallup, 2009). Despite this, many organisations believe that employee engagement is a dominant source of competitive advantage. Results from research organisations and corporate results have demonstrated that there may be a strong link between employee engagement, employee performance and organisation outcomes (ibid). The key drivers of employee engagement identified include communication, opportunities for employees to feed their views upwards and assuming and thinking that their managers are committed to the organisation (ibid).

While key factors of employee engagement have been identified it is also clear that ‘one size does not fit all’ (ISR, 2004). The review also identifies gaps and issues that have not so far been investigated, making clear the focus of where further enquiry should be. It is apparent that there is a lack of research around the predictors of employee engagement and disengagement and whether or not interventions, *inter alia*, training managers on how to communicate effectively, could help to increase engagement and/or decrease disengagement amongst employees. There is also a need for future research to concentrate on individual differences and whether variables such as personality impact user proficiency. Finally, much of the research has been conducted at the University; therefore future research must further explore other tertiary institutions where less is known about perceived employee attitudinal behavioural patterns.

4.5. Main theme 2: Information and knowledge base strategies

This main theme with its associated sub-themes addresses sub-question 1 of the main research question.

What attitudinal behavioural patterns can users (management and administrative support personnel) adopt to use the current EISAs effectively?

Within the framework of the present information and knowledge-based societies, business competitiveness necessarily requires adequate Information Technology (IT) strategies. The implementation of dedicated software systems, the top level of any IT strategy, has to comply with modern management and business requirements; therefore business software should model and integrate activities from all business compartments, distributely [sic] access the company's integrated database and offer relevant synthesis for management levels (Andreica 2005).

Software system implementation is one of the most important and challenging aspects to be solved within IT strategies dedicated to large organisations because such systems are definitely required, while their implementation has a huge impact on the organisation, both from necessary resources and future impact points of view. An adequate solution is to be chosen by taking into account good time management, co-ordinated with ICT human resources and financial strategies, adapted to the organisation's targets (ibid).

Large organisations possess considerable financial and human resources, therefore can decide to sustain their own software development team within the IT department, in order to design and implement dedicated software for the organisation. Such a strategy has the enormous advantage of own software manageability, which is extremely important in organisations with significant activity dynamics and is an optimal solution for organisations with good potential in sustainable IT human resources, and good financial resources. On the other hand, this solution is not recommended under time constraints, since it requires a considerable amount of time. In cases of time constraints and very generous financial resources, possibly co-ordinated with brand requirements including in IT (for example banks offering secured

systems for on-line payments), the recommended strategy is to acquire the dedicated software from highly rated IT software organisations. (INT #1).

For years we gave advice of how to effectively amend the system whilst retaining the original aspects of the old system (INT #3; INT #4; INT #39). I was accused of being an obstacle when I received some of their output (deliverables). The result was that they bypassed me in subsequent reviews of the particular deliverable. The programme manager ensured that this was achieved by 'bad mouthing me by one of the executives at the University' (INT #4). Based on our known resource constraints (for years now), we must not follow this 'software factory' mentality advocated by the programme manager as they only look after their own interest (they only think of their pockets) (INT #3).

The decision made by the University management to outsource the development of the EISAs, has had a significant impact on the attitude of many users of the EISAs. Many feel aggrieved that the advice given by them is not considered or has been flatly rejected.

The amount of time and money spend to allow external resources to dictate and developed our core admin system without properly consulting us shows how much this University thinks of us. They are paying these contractors vast amounts of monies, which could be spend on us (permanent) staff members who have been doing this type of work for many years. They have been here for a long time and keep on changing the system to suit them. We are spending millions on a system whereas the monies could be used somewhere else (INT #38; INT #3; INT #4).

4.5.1. Sub-theme 2-1: Adaptability to new features

The ability to adapt to frequent changes has emerged as a new paradigm for successful business operations. Legacy systems are replaced by newer, more efficient and effective EISAs. What about the users who use those legacy systems efficiently and effectively according to their internal measures and control? The initial observation and quick assessment by the researcher reveals a scenario that the EISAs are not being used as intended.

The negative attitudes (in the form of being arrogant, opinionated, grumpy, unfriendly, unprofessional or just outright rude and with a certain style of body language), are some of the perceived reasons why enhancements to ISAs at the University are deemed a failure by certain users of the EISAs at the University.

I was not consulted on the main academic programme (AP) module that I use in my daily interaction with the system about what can and cannot work in a better/new system. Instead, what we have now requires much more work and effort on my part to understand what is needed from me. On the old system, I could quickly get from the system what I was looking for. Failing which, I would call the University's ICT support staff to extract some data for me or 'fix' data that was not correct. It was so easy to do this in the past. That was how we did it for the last 20 years and this new way of doing things is coming from the Registrar's office / student admin who wants to control everything (Interviewee anonymous – for fear of retribution).

According to Cortada (1998), there are four (4) problems any legacy management strategy has to contend with namely, (i) the systems are too expensive to maintain, (ii) they take way too long to replace, (iii) they support and reflect outdated business strategies, processes and (iv) they cannot accommodate or even take advantage of newer, more effective technologies. One of the challenges identified by this research is to examine ways for users at the University to overcome their reluctance to adapt and adopt the new features of the current EISA and work methods to move away from the 'old way of doing things' when it comes to the usage and maintenance of EISAs at the University. Coupled with legacy issues, this research also examined improvement methods that are required to be in place to ensure that the users do not become archaic in their attitude towards modernised ISAs. Fear of the unknown and resistance to change are identified as key reasons for some attitudinal behavioural patterns observed and experienced throughout this research.

According to Frohlich and Sarvas (2011) the problem does not lie with a user-centred design approach to innovation at all. All innovation has to be user-centred at some level to ensure

there is benefit to end users which justifies the cost of purchase or development of products and/or system applications. Organisations not considering user benefit realisation in the planning of their businesses soon realise their mistakes, since all their actions are oriented to maximising benefit through invention, cost reduction and market positioning. Business processes that are consciously user-centred throughout are informed by modern practice and published in Human-Computer interaction (HCI) conferences and journals along the way. To a large extent this is successful, but only insofar as it extends beyond the boundaries of conventional practice in considering business models and technical infrastructure through which the core inventions would have to be accessed by users.

Frohlich and Sarvas (2011) argue that HCI does not go far enough in addressing ‘business factors’ relating to commercialisation, nor does it study the uptake of technology over time. This is a serious problem in HCI because it compromises the commercial impact of design on products. In addition to the application of behavioural insights to design, they (ibid) raise the issue of the need to be concerned about the application of behaviour, technology and design insights to business. They further argue that the understanding of human-technology interaction is incomplete without studying the business climate in which it takes place, and the way technology is socially shaped through it over time.

4.5.2. Sub-theme 2-2: Resistance to change

The impact of users’ resistance to adopt the EISAs has profound implications for the University. The data in the EISAs is out of sync as data is still captured and manipulated in the ‘old’ Finsys application system. The two applications must be synchronised at regular intervals, which does not form part of the scope of the SEMS programme mandate.

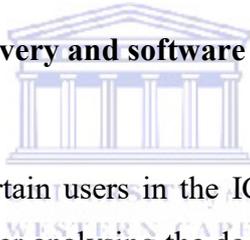
I don't see the need to use the new system as most, if not all the information I need is currently on the Linc system (The name used by many users to identify the 'old' student administration system). This new system is such a waste of my time (INT #30).

The SGC reports (2006, 2009) suggests that customer and user involvement, executive support, clear statements of requirements and proper planning are the top four success factors

for an IT project. Programmes and projects with a large scope may require more complex governance teams, and displaying active sponsorship demands good decision-making. Some of the other suggestions made in the SGC report (2006) include facilitated workshops employing Joint Application Design (JAD) workshop techniques which, *inter alia*, can help participants learn to deliver products and should ideally be facilitated by an unbiased facilitator not linked to the organisation or the contractor providing the service. The University employed a programme manager to manage the SEMS programme on their behalf whose position is directly linked to the rector's office. The same resource is also the managing director (MD) of the project management consultancy firm which has managed the streams of the SEMS programme as a sub-project.

Refer [Appendix C](#) which outlines some of the issues faced by the SEMS PMT and the users of the 'old' Linc (FINSYS) student admin system, which led to the total redesign of the student enrolment business processes at the University.

4.5.3. Sub-theme 2-3: Project delivery and software development



During the interview process of certain users in the ICT department at the University, the term SDLC is used ad nauseam. After analysing the document outlining the SDLC approved methodology, the researcher observes that it is a well written reference document commonly used as a glossary of terms. It lacks impetus, and is open to be interpreted as just another aimless product. This supposedly SDLC document is not even considered as a possible methodology by the external service provider (ESP) who has been contracted by the University to implement the suggested enhancements to the ISAs. The Standish Group's CHAOS report (SGC, 2006) shows that more than a quarter of software projects fail and that nearly half of all Information Technology (IT) projects are "challenged", i.e. completed, but over-budget, behind schedule, and delivering fewer or less functional features/functions than originally planned. The most important aspect of the Standish Group research (SGC, 2009) is discovering why projects fail. To do this, they surveyed IT executive managers for their opinions about why projects succeed. The three major reasons that a project will succeed are (i) user involvement, (ii) executive management support, and (iii) a clear statement of

requirements. There are other success criteria, but with these three elements in place, the chances of success are much greater. Without them, chance of failure increases dramatically.

Similar research was conducted in South Africa to determine IT project management maturity of organisations as well as the success rate of IT projects. An extensive survey was conducted of over 200 respondents, and it was found that 27 percent of projects failed, 36 percent are challenged and 37 percent are considered a success. The average perceived maturity of organisations is found to be 2.97, while the actual maturity is calculated as 3.61. No correlation could be found between success rate and maturity of project management (Labuschagne and Marnewick, 2009).

The results show that project outcome is influenced by direction, people and processes. Direction and people are critical success factors of a project, while a lack of people and processes lead to failure. People therefore form the crux of a successful project (ibid). According to the SGC report (2006), software development is part of an orchestrated business change event. Delivering the wrong software correctly or delivering the right software incorrectly can make or break not only the project, but also the business. Satisfied customers are the products of continual business involvement in the project life cycle (SGC, 2006).

It is generally understood that software applications modify behaviour: users navigate new work processes and procedures, performance expectations change, yet based on observation, scant attention is paid to these post-implementation issues. The business goals and objectives which drive software development are based on the expectation of change. It is therefore not surprising that when software projects fail or disappoint people, it often has nothing to do with the technology and everything to do with people factors, i.e. the environment, rewards, feedback, procedures, measures, work aids, communications, etc. In Chapter 5, the researcher aims to provide a governance framework to address these and other observations throughout this research at the University.

Nearly two decades ago research reported a high degree of risks in IT projects, namely scope creep, schedule pressure and quality problems (Jones, 1996). According to the Software Engineering Institute's Capability Maturity Model data (SEICMM), internal views of software development lifecycles indicate high defect rates and immature software development processes. The focus of Jones' (ibid) investigation is extremely relevant and

important in today's environment. This reputable work has significantly contributed towards the emphasis of strategic alignment of metrics associated with successful systems development projects in successful organisations (i.e., those that are delivered on schedule, relatively close to budget, and with high levels of quality and reliability).

A need, however, to differentiate the grey area around the alignment of performance measurement (strategic strength), still exists. An old saying re-emphasised by Puth (2002:92), clarifies the above grey area, "What gets measured, gets managed". Bauer (2004) emphasises that those things which are not measured, merit little or no attention. The SEMS programme development undertaken at the University is no different from what researchers have found over the last couple of years. What had been scheduled to be an estimated two year programme, has turned out to be an elongated engagement spanning more than a decade (INT #3).

Under no circumstances is this research undervaluing the enormous task undertaken by the University's project team members (PTM) to produce a fully integrated administrative system with the focus of a single source of correct information. The main student administration system at the University is depicted in Figure 6, which outlines some of the challenges faced by the PTM and the various business units staff, mandated to deliver on this vision. The framework highlights the interrelated objectives of the various components forming part of the EISA architectural design.

4.5.4. Sub-theme 2-4: User acceptance of a system

The success or failure of an information system is directly related to end-users that either accept or reject the proposed information system. Whether it is COTS applications or developed ISAs, it is generally understood that if the users' needs are not met it means that the system has failed to deliver according to the end-users expectations. One of the most critical phases in software engineering is the solicitation of stakeholder requirements (Benamati and Rajkumar, 2003; Ikart, 2005).

Determining user acceptance of a system is a difficult but important part of human factors research and application. While there is currently no complete theory or model that explains and predicts acceptance, there is an emerging understanding of the key variables in the technology, the user and the implementation process that affect acceptability. To be accepted, a technology must satisfy basic usability requirements and be perceived as useful by its intended user community. User experience and training will impact acceptance levels as will the manner in which the technology is implemented to contribute to organisational goals and working practices (Dillon 2001).

A brief synopsis by the researcher concludes that interpretation differs from one business unit (faculty/department/school etc.) to the next at the University in their common understanding of what the EISAs should do, and its limitations. The business units that the solutions are delivered to, do not make use of the new/enhanced features of EISAs and still prefer using the 'old' application. For instance, the user producing the results refuses to use the new/enhanced features of EISAs because she created the spread sheets and knows how to change the documents to reflect what it is she wants her audience to see. The same user is invited throughout the course of the sub-project activities for SEMS, but does not make the time to attend, echoing *'it's a waste of time. I know my system and will keep on using my system'*. This behavioural pattern is escalated to her line manager but no action is taken.

4.5.5. Sub-theme 2-5: Employee commitment

The conceptual framework employed in this research is to firstly, discuss the prevalence of misbehaviour and then employ a historical perspective to search the literature for previously proposed typologies and definitions for employee misbehaviour.

Psychologists define attitudes as a learned tendency to evaluate things in a certain way. This can include evaluations of people, issues, objects, events, ideas or just about anything in your environment (Zimbardo, 1999). Such evaluations are often positive or negative, but they can also be uncertain at times. For example, you might have mixed feelings about a particular person or issue. We tend to assume that people behave in accordance with their attitudes.

However, social psychologists have found that attitudes and actual behaviour are not always perfectly aligned.

The earlier work developed by Hofstede (1980, 1985) has been used as a useful framework for trying to understand cross-cultural differences in employee attitudes. Importantly also, the same framework has also been used in recognising and understanding the cultural causes of employee attitudes. According to Saari and Erez (2002) culture is, according to the job a person has, a strong predictor of employee attitudes.

The construct of employee commitment, often referred to as organisational commitment, has received attention in organisational behaviour research and subsequent publications over the last five decades (Reichers, 1985; McGee and Ford, 1987; Morrow, 1983; Meyer and Allen, 1991; Park and Rainey, 2007). Researchers have found significant benefits such as higher employee retention, reduced absenteeism, increased productivity, increased profitability, and increased customer satisfaction accrue to organisations with engaged and committed employees (Cooper-Hakim and Viswesvaran, 2005; Jaramillo, Prakash and Marshall, 2005).

There is well-established literature on the antecedents of employee commitment, though the relative importance of these antecedents to particular groups of workers remains unclear. Relying on a general set of antecedents for all workers may result in the application of inappropriate Human Resource Management (HRM) policies and practices. This research also focuses on knowledge workers as they have been identified as important to the organisational success of the University as outlined in the Institutional Operating Plan (IOP) 2010-2014. Knowledge workers have higher attitudinal commitment and lower intention to quit than routine-task workers. The literature is, however, divided on what constitutes knowledge work.

There has been substantial focus on employee engagement in recent years as well as a rapidly growing body of academic and practitioner research in the area (MacLeod and Clarke, 2009). A comparative analysis of various findings (see Table 3.0) indicates that business leaders now believe that engagement is critical for their businesses (CLC, 2011) and some argue that

employee engagement is a key element to the success of any organisation (Robertson-Smith and Markwick, 2009).

Table 3.0: Employee engagement as a key element

Research Origin	Findings	Reference
Corporate Leadership Council (CLC)	70 percent of business leaders now believe that engagement is critical for their businesses	CLC, 2011
Strategic HR Review 9(3): 11-17	Employee engagement is a key element to the success of any organisation	Hayward, 2010
Global Workforce Study	27 percent of employees are ‘highly engaged’, with an equivalent proportion of employees being ‘disengaged’	Towers Watson, 2012
Global Workforce Study	Engagement levels compare unfavourably to a global average of 35 percent ‘highly engaged’ employees	Towers Watson, 2012
Kingston employee engagement consortium project. London: CIPD	Only 8 percent of employees were strongly engaged	Alfes, Truss, Soane, Rees, and Gatenby, 2010

<p>Chartered Institute of Personnel and Development, London, UK</p>	<ul style="list-style-type: none"> - Just over one in three employees (35 percent) were actively engaged - Less than one in five employees (18 percent) were engaged on a daily basis, - 59 percent reporting engagement once a week, - The remainder reporting engagement less frequently 	<p>Truss <i>et al.</i>, 2006</p>
<p>Corporate Leadership Council (CLC)</p>	<p>24 percent of employees were highly engaged</p>	<p>CLC, 2011</p>
<p>Gallup (UK Survey)</p>	<p>Only 19 percent of employees were ‘engaged’, with 61 percent ‘not engaged’ and 20 percent ‘actively disengaged’</p>	<p>Cited in Fairhurst, 2008</p>
<p>The HAY Group</p>	<p>85 percent of the world’s most admired companies believed their efforts to engage employees had reduced employee performance problems</p>	<p>Royal and Stark, 2010</p>

Rayton (2012) postulates that engagement precedes performance and concludes that engagement drives performance as the relationship between engagement and performance is four times stronger than the reverse. According to the reviewed literature, investigating the relationship between engagement and performance provides evidence of the links between engagement and performance at the level of the individual employee, and evidence of these

relationships at business unit and organisational levels (Hakanen and Perhoniemi, 2008; Purcell *et al.*, 2009; Winkler, Cornelius and Kleinmann, 2012).

4.6. Conclusion: Research findings

In order to further expand on the patterns (themes) influencing employee behaviour, the researcher posits that the knowledge and expertise of certain employees at the University has contributed to the perceived notion that certain employees deliberately derailed or tried to derail the initiatives undertaken by the SEMS programme team members to deliver improved ISAs. According to the reviewed literature, this is labelled as professional sabotage (refer Table 1.0). Possessing first-hand knowledge of statutory and procedural activities at the University and also being able to influence and exert pressure on fellow colleagues has contributed to the perceived notion of certain employee attitudinal behavioural patterns identified in this research.

Most of the themes identified in this research stem from the fact that, despite clear recognition that there would be challenges in enhancing the old ISAs, the cultural and organisational issues at the University are more complex than anyone had anticipated (INT#1, 2013). The introduction of newer technologies and ideas for improving decision-making processes in the student enrolment process incorporated into the EISAs, needed more time and should have grown more organically than has been allowed for. In other words, sufficient time has not been allowed for the process of learning and appropriation within and amongst the users of the EISAs. Furthermore, there is a concern amongst some users, especially in certain Faculties/Departments, that the EISAs do not factually reflect their decision-making culture. Some users feel that the EISAs are biased towards the rational aspects of the University at the expense of interpersonal relations. Common collaboration issues such as '*information overload*' and connectivity also surface as themes during this research.

Addressing these challenges will require broad awareness and understanding across the University. It will also require a cadre of people committed to building up skills and ensuring that the strategic intent (usage) of EISAs within all Faculties/Departments throughout the

student lifecycle at the University is adhered to. This cadre of resources could emerge from the growing number of staff in *'the waiting'*, i.e. the people who must be groomed to take over from those resources nearing retirement. The succession and capacity plans for such an initiative should be discussed, consulted and agreed with staff across a multitude of impacted business units at the University. The approved plans emanating from such an initiative should be kept relevant and up to date taking into consideration staff turnover and staff movement.

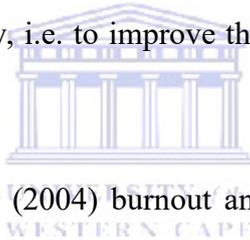
Factors giving rise to the attitudinal behaviour of some managerial and administrative support (MASP) personnel utilising the EISAs at the University, include the manner in which the staff allocated to the SEMS programme are contracted and/or assigned from the permanent staff at the University. Paying external contracted staff nearly twice the salary of a permanent staff member, causes tension between the project team members (INT #3). Users (MASP) feel their knowledge and contribution to the outcome of the SEMS deliverables is underutilised and undermined. The staff raise concerns about the creation of 'wish-lists' by business for their specific requirements through the business analysis process, uncertainty associated with the project outcomes, and their impression that the University would spend millions on analysis with no tangible artefacts (Koster, 2008).

The outcome (results) of this attitudinal behaviour contributes to the negative and at times unsupportive attitude by some users (MASP) towards the objectives of the SEMS programme. Efficiency of processes, particularly with regard to expedient decision-making, accountability, data integrity and communication are compromised by inadequate workflows and data integration. Work processes are largely paper-based and timelines and deliverables are not integrated or aligned optimally. They also contribute to the 'No administrative innovation for 15 years' syndrome articulated by the (late) Registrar of the University. Student enrolment constitutes several processes relating to the life-cycle of a student from admission to graduation and these processes are managed in different executive portfolios in approximately sixteen different offices or divisions at the University.

The proficiency of users (MASP) utilising EISAs at the University is not at the level it should be. This is evident based on the maintenance and support requests submitted and evaluated during the pre- and post-registration periods (2011-2014). It is evident that more focused user

training is required throughout the year. Some of these training sessions should be refresher/overview of the capability and functionality of the integrated EISAs. The notion put forward that EISAs must be changed to accommodate varied competency levels amongst the users (MASP) of the EISAs, should be disregarded and avoided at all costs. The literature suggests that capabilities and competence of staff must be improved. The overwhelming notion is that EISAs should be aligned to business requirements and not the other way round (Devi, 2010; Gartner ACIO, 2014).

The acceptable behavioural patterns identified are that the University leadership must strive to engage employees in strategic objectives via meaningful change management initiatives. The outcomes of such initiatives would lead to a more committed and engaged work force which would then also improve the effective and efficient use of any ISA at the University. A fully integrated ISA catering for most, if not all, of the University's administrative business processes throughout the student lifecycle, can significantly contribute to one of the main strategic objectives of the University, i.e. to improve the attraction, retention and throughput of students at the University.



According to Schaufeli and Bakker (2004) burnout and engagement tend to be negatively related. They posited that burnout is mainly predicted by job demands coupled with a lack of appropriately skilled job resources. The burnout phenomenon is related to health problems and contributes to staff turnover. Engagement on the other hand, they argue is exclusively predicted by the availability of appropriately skilled job resources and also contributes to the staff turnover statistics.

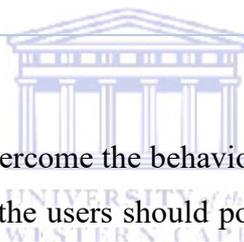
In summary, the themes identified throughout this research impacting users' attitudinal behaviour towards EISAs are: *Disengaged employees; employee engagement; user participation; employee communication; rewards and recognition; employee development and employee commitment*. These identified themes are presented in a tabular format in Table 4.0. The author of this research argues that these identified themes are part of the critical determinants of information systems' (IS) success to the extent that they influences beliefs

that lead to users attributions for IS related outcomes, and ultimately to their subjective evaluation and future use of EISAs at the University.

Table 4.0: Themes identified throughout this research

Theme identification	Description	Influencing Factors Identified
Disengaged employees	<i>Disengaged employees are regarded as being very negative in all aspects of the environment they occupy at work.</i>	<i>Fear; Resistance; Inadequacy; Frustration; Suspicion; Offense; Confusion; Indecision; Abandonment; Invisibility; Isolation; Intolerance; Defiance</i>
Engaged employees	<i>Employee engagement is the self-image of employees in performing their daily tasks</i>	<i>Loyalty; task oriented; results driven</i>
Employee commitment	<i>Employee commitment is deemed a psychological state that compels an individual toward a course of action of relevance to one or more targets</i>	<i>Accomplishment; proud in association</i>
User participation	<i>User willing participate and contribute to the well-being of the organisation</i>	<i>I want to contribute</i>
Employee Communication	<i>Effectively communicate with all within their working environment</i>	<i>Contribute and participate</i>
Rewards and recognition	<i>Provide incentives to employees to excel in their working environment</i>	<i>Output of work equal take-home pay</i>
Employee development	<i>Provide employee with opportunities to improve themselves</i>	<i>An educated employee is an asset</i>
<p>The themes listed below did not feature as prominently as first envisioned during this research. However, it does not imply that these identified themes play a more prominent or lesser role in determining users' attitudinal behaviours towards EISAs.</p>		
Employee loyalty	<i>Employee loyalty can be defined as employees who are devoted to the success of their organisation - they plan to remain with the organisation and they do not actively seek for alternative employment opportunities</i>	<i>Longevity; commitment</i>
Employee Burnout	<i>Burnout is a state of emotional, mental, and physical exhaustion caused by excessive and prolonged stress resulting in feeling overwhelmed and unable to meet constant demands and losing interest or motivation that led to the person taking on a certain role in the first place</i>	<i>Disengaged</i>

Employee plateauing	<i>Employee Plateauing is a situation when an employee reaches limits of promotional potential for his/her current position or job</i>	Career development (PDS)
Emotional attachment	<i>Emotional attachment is an aspect of interpersonal relationships that varies in intensity from one relationship to another and varies from one time to another</i>	<i>Identify with and involvement in the organisation</i>
Topics of discourse	<i>Undesirable behaviour</i>	<ul style="list-style-type: none"> • <i>The willingness or lack thereof to partake and share knowledge of current system capabilities</i> • <i>Showing a tendency or the wish to harm and/or do evil to others</i> • <i>Disagreement element in the thought process (dissent)</i> • <i>Mistrust, back biting, politicking, bad mouth, back stabbing, professional sabotage (i.e. deliberately not attending meetings etc.)</i>
Malevolent – Malicious behaviour		
Normative disagreement		



To answer the question of how to overcome the behavioural patterns, Chapter 5 elaborates on what knowledge, skills and attitude the users should possess in order to manage and operate the EISA efficiently and effectively. Ways must be found by interpreting what research suggests and also what best practices this South African university being researched should adopt/follow in order to improve on lessons learnt from the SEMS programme and the post activities highlighted by this research. The ability to adapt to frequent changes has emerged as a new paradigm for successful business operations. Disparate and legacy systems are replaced by modernised, more efficient and effective EISAs.

The Institutional Solution Framework (ISF) in Figure 5 is recommended for future use throughout the lifecycle of any project undertaken at the University. This framework can be very useful for all South African universities insofar as it suggests strong relationships between the leadership (managerial staff) and operational behavioural concerns (administrative support staff). Strategic and Tactical behaviour is aligned by ensuring relevant sources of knowledge are consulted and kept informed throughout the process. This

source of the knowledge component, according to EFS (2014), can then lead to the ‘end-in-mind’ which articulate to *‘let’s do the right things, not just do things right’*, which then ultimately equates to improvement in efficiency. The practical use of this suggested conceptual framework (IFS) therefore answers the main question of this research: *‘What attitudinal behavioural patterns can users (management and administrative support personnel) adopt to use the current EISAs effectively’*. Further research is encouraged to evaluate the possible gaps in this approach in order to improve the efficiency of such and future conceptual frameworks.

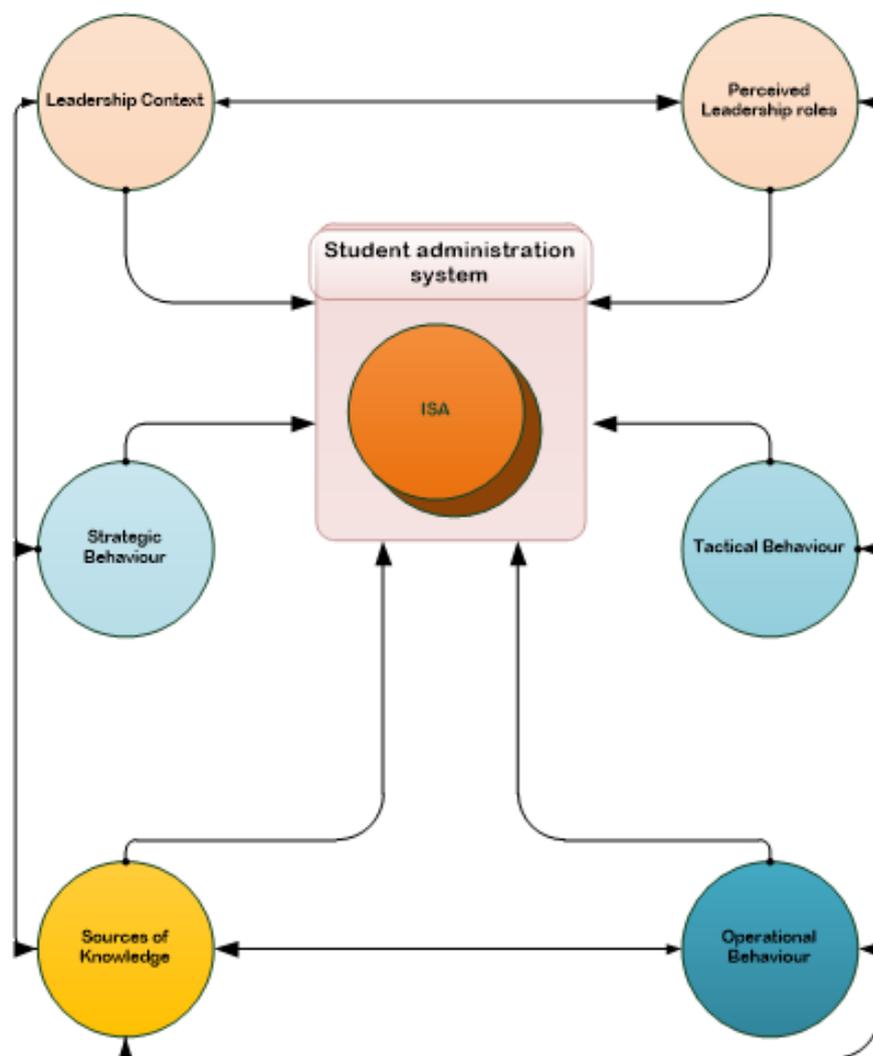


Figure 5: Institutional Solution Framework (Source: Author)

Interactive and collaborative consultations are needed to ensure major projects get delivered within the triage of Project management best practices (i.e. scope, time and budget). This in

turn will lead to better communication of strategies and improve visibility of the goals and objectives set for service delivery at the University. Getting the *right* resources to do the *right* projects will ensure the *right* portfolio mix is delivered to the *right* recipients of the products and/or services (PRINCE2, 2009; EFS, 2014).

The goals and strategies depicted and outlined in the Institutional Solution Framework (ISF) reflect a synergised framework of intent. This intent has been informed by the deliberations and decisions emerging from a number of sessions held with various key stakeholders of ISAs at the University that have taken place over the last three to four years.

The next chapter (Chapter 5) concludes this research by providing various recommendations based on the findings of the analysis outlined in Chapter 4.



Chapter 5: Conclusion and Recommendations

5.1. Introduction to this chapter

This chapter brings this research to a close by providing various recommendations with respect to the objectives and aims highlighted during this research, based on the findings of the analysis outlined in Chapter 4. The proposed method of this research is a phenomenological case study in a single organisational setting and is centred on the usage of an organisation-wide EISA at the University.

The key to improving employee performance is through employee engagement. If any organisation's vision is to achieve a highly committed workforce that provides a competitive advantage, then gaining insight into the nature of how strong employee commitment and engagement develops or fails in the workplace may take on relevance to policy makers. The scope of this research is limited to the users performing administrative duties at the University who utilised the EISAs, to perform their daily duties. Due to limitations in scope, academic and student activities are excluded from this research. The overarching student lifecycle at the University forms the backbone of this research. In order to maximise the projected usefulness of the EISAs, a thorough understanding of the student lifecycle is mandatory.

5.2. Re-visiting the objectives of this research

The main objective of this research is to investigate attitudinal behavioural patterns that management and staff can adopt to use the current EISAs effectively, and to propose and recommend alternative approaches and/or methods in this regard. In order to achieve the main objectives, this research has established the following three sub-objectives:

1. To explore the perceived attitudinal behavioural patterns of users (MASP) as well as the associated results with these types of employee behavioural patterns;

2. To identify the functional support role administrative officers and managerial staff fulfil at the University, and to determine whether their skill set is sufficient and if they are proficient to handle the outsourced EISAs effectively;
3. To determine if it is possible to influence user attitudes to overcome the perceived attitudinal behavioural patterns at the University.

All three sub-objectives were achieved by extensively reviewing the pertinent literature, which was subsequently tested in the empirical part of this research. In addressing the **first sub-objective**, it was found that the attitudinal behavioural patterns (themes) include: *Disengaged employees; Engaged employees; Employee commitment; User participation; Employee communication; Rewards and recognition and Employee development*. The most important perceived attitudinal behavioural themes identified in this research are presented in a tabular format in Table 4.0. Some of the identified attitudinal behavioural themes described in Table 4.0, however, did not feature as prominently as first envisioned during this research. Examples of the latter include *Employee loyalty; Employee burnout; Employee plateauing and various topics of discourse*. However, it does not imply that all these identified themes play a more prominent or lesser role in relation to one another, in determining users' attitudinal behaviours towards EISAs. It was found that the latter attitudinal behavioural patterns (themes) were not sufficiently explored in literature.

Analysing the **second sub-objective**, it was found that if users were to fully comprehend and use any large scale IS application, certain adaptive skills would be required to make optimal use of the expected outcome (functionality) of the system. Adaptability cannot be taught or passively assimilated: it is reached through a transformation process in which existing competencies are adapted and tuned to new circumstances. Capability enables one to work effectively in unfamiliar contexts, whereas competence is what individuals know or are able to do in terms of knowledge, skills and attitude. Capability encompasses the extent to which individuals can adapt to change, generate new knowledge, and continue to improve their performance. The trend by well-known industry leaders and their organisations is to provide a stable work environment which promotes career development and provide an organisational and work climate which respects the dignity and worth of the individual. These organisations

equitably rewarded their employees by providing equal opportunities and encourage initiatives and challenge individual capabilities.

In the analysis of the **third sub-objective**, it was found that it is possible to influence user attitudes to overcome the perceived attitudinal behavioural patterns (themes) identified in this research. Employee relationships evolve over time into trusting, loyal, and mutual commitments as long as the parties abide by certain norms of exchange. Engaged, committed and informed employees add value to any organisation. Some attributes of an engaged employee includes the sense of an employee feeling valued; the employee being able to be involved in decision making; employees feel able to voice their ideas and to develop their jobs. With these attributes in places, some employees feel obliged to bring themselves more deeply into their role performances.

5.3. Results associated with the identified types of employee behavioural patterns

This research demonstrates that there is a firm correlation between employee engagement, high organisational productivity and performance across all sectors of the economy. Based on evidence in the literature, it is recommended that employee engagement at the University should be a top priority to ensure continuous and proper adherence to the goals and objectives of the University as a whole. Employee engagement is a bottom line issue, impacting on the profitability or on service outcomes of organisations. In other words it is a must-do, not a nice-to-have employee attitudinal behavioural pattern. Employee engagement should be a more engaging and people-focused behavioural employee trait at any organisation.

The (research) evidence from academic research, and from research using data compiled by research houses (e.g. such as Towers Watson, Kenexa, The Hay Group, Aon Hewitt and Gallup) confirms the cumulative effect of these different studies. The research outcome of the latter leaves little room for doubt about the importance of engaged employees. Employee engagement can best be described as a process by which an organisation increases the commitment and contribution of its employees to achieve superior business results. Employee engagement impacts positively on levels of absenteeism, staff retention, levels of innovation,

customer service, and positive outcomes in public services and on staff advocacy of their organisations.

It is therefore clear that engagement impacts more on performance than the other way around. The empirical evidence of the reviewed literature shows that 94 percent of the world's most admired companies believe that their efforts to engage their employees have created a competitive advantage, whereas more than 80 percent of these companies believe that efforts to engage employees have reduced employee performance problems. Sufficient researched evidence suggests managers unequivocally agree that this century demands more efficiency and productivity than any other times in history.

Businesses are striving to increase their performance and as such managers are challenged with many issues in order to keep abreast of the many changes in their work environment. To help managers manage, different scholars, researchers and consultants have been contributing by showing the best ways they think are useful to managers. Among those suggested techniques, concepts like Total Quality Management (TQM), Business Process Reengineering (BPR) and Six Sigma earned recognition from many authors and are found helpful in increasing organizational performance by focusing on operational and process improvements. These suggested techniques are still being used as tools for management in their effort to plan, execute and control the desired quality changes in their respective areas of operational responsibilities.

5.4. Recommendations for practical use of the proposed model

As part of the recommendations, this research proposes an ISF framework (refer Figure 5) for mapping alignment between various stakeholders at the University and approved vendors to address business requirements. Whilst such categories of the recommendations made are no doubt important, they are far from being the only determinants of, *inter alia*, adoption and assimilation of technological enhancements of information systems. Rather, a shift in paradigm is required to ensure all strategic projects are aligned and delivered according to the articulated goals and objectives of the University's current IOP 2015-2019 (in press).

A more strategic medium to long term objective of the University could be realised if the output of this research were used to determine what the practical and acceptable attitudinal behavioural patterns of users should be to support the transition to the EISAs and to improve the perceived deficiencies in the effective use thereof at the University. The appropriateness and effectiveness of this objective realisation could then be used and possibly measured against the common values of student administrators at the University, as articulated by the Office of the Registrar (OOR). The common values identified by the OOR are:

- Accountability
- Commitment
- Professionalism and continuous improvement
- Team work and open communication
- Shared vision
- Respect
- Service excellence and continuous improvement.

This focus is part of the second perspective discussed in this research (i.e. ‘*enhanced integrated information systems*’) which emerged as a result of the continuous realignment to strategic objectives of the University and the vision for totally integrated ISAs.

5.4.1. Factors required to keep employees engaged

Factors required to keep employees engaged can be by means of *managing the performance of employees*. You can’t manage something if you can’t measure it, is a general consensus reached by this research. Performance management consists of significantly more than periodic evaluation of performance. It is the art and science of dealing with employees in a manner intended to positively influence their thinking and behaviour to achieve a desired level of performance. Top-performing organisations understand that *employee engagement is a force that drives performance outcomes*. In these organisations, engagement is more than a human resources initiative, it is a strategic foundation for the way they do business. Employee engagement is important for managers to cultivate, given that employee disengagement is central to the problem of employees’ lack of commitment and motivation.

The nature of an *organisation's leadership and management style* can have an indirect impact on engagement behaviours demonstrated by employees, through leaders building trust in their staff. The researcher therefore argues that a participative, inclusive management style and relationship building with subordinates and reporting lines, is required as an integral part of the leadership culture (i.e. a strategic foundation for the way forward). The advantages of having more engaged employees are outlined as follows:

- Engaged employees will normally perform better and are more motivated;
- There is a significant link between employee engagement and profitability;
- Engaged employees form an emotional connection with the organisation;
- Being engaged employees impacts their attitude towards the organisation's customers, their fellow colleagues and this improves customer satisfaction and service levels;
- Engaged employees build passion, commitment and alignment with the organisation's strategies and goals;
- Engaged employees will increase employees' trust in the organisation;
- Engaged employees create a sense of loyalty in a competitive environment;
- Engaged employees will provide a high-energy, collaborative working environment that boosts business growth;
- Engaged employees can be used as effective brand ambassadors for the organisation.

Similarly, highly engaged employees will consistently deliver beyond expectations and are more likely to be top performers compared to other employees. The researcher posits that users (MASP) must become or be assisted to become more engaged, which can lead to attitudinal and behavioural patterns conducive to the adoption and the efficient and effective use of EISAs at the University.

It is essential for managerial staff to *always model positive behaviour* concerning performance; what one does or says as a manager always has an influence on others. The

kinds of employee behaviour most likely encountered relative to performance management efforts stem from resistance to change and lack of complete understanding of what is expected of employees whilst using technology systems to augment their daily duties. Employee participation must be elicited whenever possible for performance improvement; as far as the inner workings and details of a specific job are concerned, there is no one who knows the job better than the person who does it on a daily basis. For each task to be done, an employee needs to know what output is expected, how this output will be measured, and what standards are applied in assessing the output. Managing employee performance requires *on-going contact with each employee, regular feedback, and whatever coaching, counselling, and training are necessary* to bring an employee back on track when a problem appears. Sustaining efficient and effective employee performance requires the manager's on-going attention and involvement.

How *leaders manage employees* can significantly influence engagement and disengagement in the workplace, which in turn influences an organisation's bottom line and workers' health and wellbeing. The most progressive organisations are those that are *engaging their employees*, thereby producing more and higher quality of work. The leadership at the University must approach employee engagement with sustainability in mind, and thus, *provide managerial staff with tools to help drive performance* on an ongoing basis through a combination of measurement, reporting, learning, action planning, and strategic interventions.

5.4.2. Improvement required in varied levels of proficiency

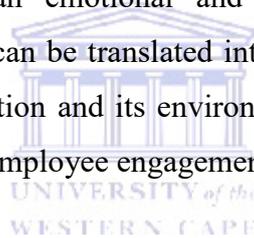
This research highlights the dilemma the University is confronted with during the planning, delivery and execution of the SEMS programme at the University. The EISAs were conceptually designed more than a decade ago and the remnants of the SEMS programme are still being implemented and/or reworked during the 2014 academic calendar year. The tacit knowledge that left the University during this period as a result of retirees and those about to retire, could have detrimental consequences for the University. A critical first step in being more strategic is for organisations to link their workforce planning efforts to their business objectives. A workforce plan that addresses amongst others critical talent shortages can enable employers to make smart investments in human capital and proactively manage

business risks and costs. Most organisations, however, do not have a formal approach to human resource planning and do not link their resource analytics to their business goals. This creates a tremendous opportunity for the leadership at any organisation to be more strategic in addressing resource issues.

5.4.3. Improve social networking and relationships

Social exchange theory (SET) provides a theoretical foundation to explain why employees choose to become more or less engaged in their work and organisation. In terms of the earlier definition of engagement, employees feel obliged to bring themselves more deeply into their role performances as repayment for the resources they receive from their organisation. When the organisation fails to provide for these resources, individuals are more likely to withdraw and disengage themselves from their roles.

Employee engagement involves an emotional and psychological connection with an organisation and its people, which can be translated into positive or negative behaviour and relationships at work. The organisation and its environments play a leading role in shaping employee attitudes and the state of employee engagement.



5.4.4. Implement information and knowledge base strategies

Within the framework of the present information and knowledge-based societies (e.g. see the framework in Figure 5), business competitiveness necessarily requires adequate IT strategies. The implementation and usage of dedicated software systems, the top level of any IT strategy, has to comply with modern management and business requirements; therefore business software should model and integrate activities from all business units. Software systems delivery is one of the most important and challenging aspects to be solved within IT strategies dedicated to large organisations, because such systems are definitely required, while their implementation and usage has a huge impact on the organisation, both from necessary resource utilisation and future impact points of view. An adequate solution is to be chosen by taking into account good time management, coordinated with IT human resources and financial strategies, adapted to the organisation's targets.

Successful IT based projects share essential common characteristics. Everyone involved in these types of projects should have a clear idea of ‘*what*’ must be achieved; the reason ‘*why*’ it must be done, ‘*when*’ and at what ‘*cost*’. The project team members (PTMs) will then understand a project’s guiding principles, i.e. vision, motivation, action, timeline and budget. PTMs will also willingly co-operate as a cohesive team that adheres to these guiding principles. This type of success-inducing cohesion needs to be initiated, encouraged and sustained through leadership that spans the entire project. Skilled, competent and experienced resources play a crucial role in understanding, articulating and sustaining the vision and motivation of successful IT based projects.

5.4.5. Improve adaptability to new features

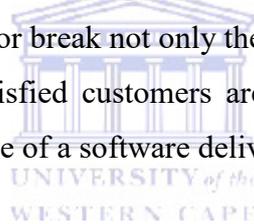
The ability to adapt to frequent changes has emerged as a new paradigm for successful business operations. Legacy systems are replaced by newer, more efficient and effective ISAs. Frequent requests from various application users for rapid change or improvement to ISAs needs to be accepted and embraced by those responsible for maintaining and supporting ISAs. Business processes were created in the past to rectify a specific problem at a point in time. Organisations must not fall into the comfort zone trap, whereby they continue to force the use of processes that are no longer relevant. Some processes may have been created at a different time to meet a business problem that has evolved or no longer exists. Therefore, organisations need to examine their current business processes in order to ascertain ‘fit-for-purpose’. Some business and system processes have evolved and new processes have been created to meet challenges in the new world. The problem then becomes not irrelevant processes, but in the way in which they are applied. Processes of old have been executed in a dogmatic fashion, and as processes have evolved, the adoption, usage and enforcement strategies of the processes must also evolve.

The success or failure of an information system is directly related to end-users that either accept or reject the proposed information system. Whether it is COTS applications or developed ISAs, it is generally understood that if the users’ needs are not met it means that the information system has failed to deliver according to the end-users’ expectations. It is

generally accepted that one of the most critical phases in software engineering is the solicitation of stakeholder requirements. The Agile methodology (Scrum / Kanban) indicates that smaller time frames, with delivery of software components early and often, will increase the success rate. Shorter time frames result in an iterative process of design prototype, develop, test, and deploy small elements. The Agile approach engages the user earlier, each component has an owner or a small set of owners, and expectations are realistically set. In addition, each software component has a clear and precise statement and set of objectives. Software components and small projects tend to be less complex. Making the projects simpler is a worthwhile endeavour because complexity causes only confusion and increased cost.

5.4.6. Improve organisational change management strategy

Establishing an organisational change management (OCM) plan is crucial because software systems are designed to change an organisation. Software development is part of an orchestrated business change event. Delivering the wrong software correctly or delivering the right software incorrectly can make or break not only the project, but also the organisation the software is being delivered to. Satisfied customers are the products of continual business involvement throughout the life cycle of a software delivery project.



After the articulation of a business case and goals for the implementation of any strategic IT product or services, an organisation must decide on the behaviours they want to encourage in their employees. A fundamental change in the technology which employees have come to depend on in carrying out their daily work, may mean that the organisation will need to spell out specifically the activities staff must *start doing*, *stop doing*, and *continue doing*. Clear and concise statements must be created that reflect these employee behaviours through an effective OCM strategy. The concise statements articulated in the OCM plan must be rolled out to the impacted business units utilising a formal project management methodology.

5.4.7. Adherence to a formal project management methodology

A factor which has also given rise to negative employee attitudinal behaviour at the University, especially amongst the IT personnel, is the lack of sound IT project governance

during the conception and delivery of an EISA by the SEMS project team. The success or failure of an information system is directly related to end-users that either accept or reject the proposed information system. Whether it is commercially available off-the-shelf (COTS) applications or developed ISAs, it is generally understood that if the users' needs are not met, it means that the IT system has failed to deliver according to the end-users' expectations.

The results of failed or incomplete projects show that project outcome is influenced by direction, people and processes. Direction and people are critical success factors of a project, while a lack of people and processes lead to failure. People therefore form the crux of a successful project.

It is generally understood that software applications modify behaviour: users navigate new work processes and procedures, performance expectations change, yet, based on observation, scant attention is paid to these post-implementation issues. The business goals and objectives which drive software development are based on the expectation of change. So it is not surprising that when software projects fail or disappoint people, it often has nothing to do with the technology and everything to do 'softer issues' (e.g. people factors, the environment, feedback, procedures, measures, work aids, communications, etc.).

Project management improvement initiatives add value to organisations. The organisational environment needed for continued project success is ultimately created by upper management. The way that the managers of faculties, departments, divisions and/or functions define, structure, and act toward projects has an important effect on the success or failure of those projects, and consequently the success or failure of the organisation. An effective project management culture is critical for effective and efficient service delivery using a formalised project management methodology. The changes required to become project-centric are sometimes structural, but they always involve a new approach to managing a business.

5.5. Recommendations for further research

In general, this study suggests that topics such as inspiring, confusing, angering and provoking people whilst using technology application systems, are not yet sufficiently explored. That is the reason why research of this type must continue. Hence, recommendation for future research is based on the delimitations of this research as well as on the research results. The softer issues of IT, such as employee attitudinal behaviour, as highlighted by this research, form a phenomenon which needs more attention from the leadership at researched institutions.

In order to increase generalisation of this research, it would be beneficial to explore the same issues at other higher institutions in the education sector in South Africa (HESA). It does not imply that the issues highlighted in this research are confined to the HESA only. Similar international comparative studies must be encouraged at other tertiary institutions where the research outcomes can be shared in the form of a knowledge management repository system utilising the latest cloud computing services.

According to this research, it appears that more efficient methods must be explored in order to improve on service delivery of mainstream student administrative systems which, if designed properly, can be used by all tertiary institutions in South Africa. Being limited in its scope, this research could not explore in greater detail how EISAs can be used much more effectively and what processes to follow to enable such, whilst at the same time encouraging others to dig deeper through comparable research. Hence, this is recommended for future research. How to more effectively include every accountable officer involved in the execution of student administrative functions at universities in understanding and possible changing employee attitudinal behaviour, is another topic worthy of further exploration.

5.6. Significance and implications of the research

The results of this research can benefit the leadership of the University by enabling them to follow on from documented lessons learnt from the SEMS programme and the post activities highlighted by this research, to improve the efficient and effective use of EISAs. The ability to adapt to frequent changes has emerged as a new paradigm for successful business

operations as a result of disparate and legacy systems being replaced by newer, more efficient and effective EISAs.

The implication of this research suggests that the leadership and other senior managerial staff at the University must determine: (i) Where are the *gaps in the perception?*; (ii) What are the *implications of those perceptual gaps?*; (iii) What *beliefs, assumptions and expectations* are most likely driving these results?; (iv) What if *nothing changed?*; (v) What if the results improved by *one quartile* within the coming year?. If the leadership at the University fail to react or refuse to take cognisance of the fact that the “EISAs at the University are not being used as intended”, ***then the implications of doing nothing are that the following risks might materialise:***

- *Their defined ICT business goals*, both short and long term are not achieved;
- the *employees* of the business units will continue doing what they feel is correct;
- the *ability to respond* to customers (student’s needs) is compromised;
- the *ability to adapt* to change is questionable;
- the *ability to innovate* becomes less of a reality;
- the intended *ability to produce quality* products and services is jeopardised and
- results produced by any business unit at the University will be questionable as a result of data integrity problems.

In order to fully understand and comprehend the outcome of this research, the leadership and other senior managerial staff at the University must determine: (i) What are the *inherent cultural strengths of the staff*; (ii) Given the goals of the University, how can these *strengths be best applied*; (iii) What are the *cultural weaknesses of the staff* and, (iv) Given the goals of the University, which *weaknesses are most important*.

The contribution of this research should be read in conjunction with the significance of the research as outlined in paragraph 1.9. This research aims to add value to the current state of research knowledge by critically examining the existing literature on the behavioural patterns of users, particularly their attitude and behaviour (employee behavioural patterns) and providing a reflective stance on existing debates and findings. As a result, this research addresses concerns about the lack of agreement on what employee (dis)engagement is and how issues surrounding it can be addressed. An understanding of these behavioural patterns indicates that management and staff at the University must adapt their attitudinal and behavioural patterns to use the current and future EISAs more effectively.

5.7. Limitations of this research

The limitation of this research can be seen as exploring only one higher education institute (HEI) in South Africa, which inevitably limits the generalisation of this research. A further limitation of this research arises from the necessary limiting of the research sample: only administrative personnel and managers fulfilling a support role at the University have been interviewed, and conclusions and recommendations are based on the interactions with these user groups. The other users of the EISAs were not included due to the limited scope of this research. However, the selected sample is considered as sufficient and did not influence the validity of this research.

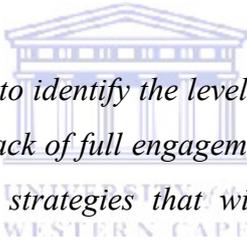
5.8. Conclusion

The researcher starts the conclusion of this research from the premise that *the performance of every organisation is, to a greater or lesser extent, influenced by its most valuable asset, the people within*. Each organisation will have employees who are central to the execution of the business strategy, and the attitudes of these people can greatly affect the way they perform their jobs as well as their willingness to remain in their current employment. Organisational policies should be chosen that resonate with the strategic mission of the organisation, but even the best policies are of little value unless they are put into practice as intended. The

failure to do so would undermine the clarity of the strategic narrative as well as the organisation's integrity.

The importance of *engaging managers* has grown in importance, as line managers have been increasingly asked to accomplish the decentralised delivery of organisational policies to their direct reports. Employee engagement performs a crucial linking role between line manager behaviours and employee performance. While there is room for discussion about the specific attitudes and behaviours that drive performance in any given organisation, the basic premise of this chapter is that employees play a central role in translating the vision of organisations and their leaders into reality.

The argument presented below, which this researcher fully endorses, is probably the most compelling case posited by this research as to why the executives and leadership at the University need to make employee engagement one of their priorities.



“Leaders should actively try to identify the level of engagement in their organization, find the reasons behind the lack of full engagement, strive to eliminate those reasons, and implement behavioural strategies that will facilitate full engagement. These efforts should be ongoing. Employee engagement is hard to achieve and if not sustained by leaders it can wither with relative ease” (Seijts and Crim, 2006).

The objectives and sub-objectives of this research are clearly articulated and were achieved by extensively reviewing the pertinent literature, which was subsequently tested in the empirical part of this research. This was followed by practical recommendation of an integrated enterprise Institutional Solution Framework (ISF) and suggestions for future research, as not all relevant topics were tested. The research is concluded by outlining the significance and implications of this research taking the limitations of this research into consideration.

It is suggested that the findings put forward in this research may lead to an improved understanding of the dynamics behind employee attitudinal behaviour, and that such knowledge could improve (i) the service capability of staff at the University to students and

other administrative colleagues, and (ii) the cost of the services and the inter-personal working conditions of administrative staff utilising a modernised, integrated student administrative information applications. Training aimed at developing emotional intelligence among the users of EISAs at the University may prove useful to the *supervisors, team leaders* and *managerial staff* in this regard. The leadership and management must endeavour to minimize negative attitudes and maximize positive outcomes amongst all users of EISAs at the University.



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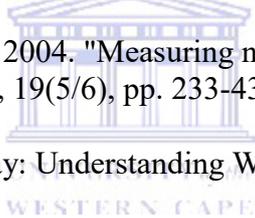
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ANNEXURES

Appendix A: Interviewees

It is hereby confirmed and agreed that this researcher undertakes to adhere to the ethical considerations for this research and that the right to anonymity and confidentiality is respected as no users' names and/or any of their personal details will be mentioned in this research.

Interviewee / Participant	Experience in Higher Education	Role in Higher Education/SEMS
INT #1	20 Years	Major stakeholder in ISAs
INT #2	10 Years	Service Delivery; Financial/risk/issue/change facilitation
INT #3	32 Years	Product owner of SEMS deliverables
INT #4	35 Years	Major stakeholder and user of the EISAs
INT #5	30 Years	Major stakeholder and user of the EISAs
INT #6	10 Years	Business Analyst of certain components of SEMS
INT #7	6 Years	Business Analyst of certain components of SEMS
INT #8	10 Years	Architect and Business Analyst of all major components of SEMS
INT #9	5 Years	Business Analyst of certain components of SEMS

INT #10	10 Years	Software developer of some components of SEMS
INT #11	15 Years	Software developer of some components of SEMS; maintenance & support of ISAs
INT #12	10 Years	Software developer of some components of SEMS; maintenance & support of ISAs
INT #13	18 Years	Maintenance and support of ISAs
INT #14	8 Years	User of the EISAs
INT #15	30 Years	User of the EISAs
INT #16	10 years	User of the EISAs
INT #17	12 Years	User of the EISAs
INT #18	5 Years	User of the EISAs
INT #19	20 Years	User of the EISAs
INT #20	10 Years	User of the EISAs
INT #21	35 Years	Major user of the EISAs on a daily basis.Gives training (ISAs usage)
INT #22	20 Years	User using the EISAs on a daily basis
INT #23	20 Years	User using the EISAs on a daily basis
INT #24	11 Years	User using the EISAs on a daily basis
INT #25	30 Years	User using the EISAs on a daily basis

INT #26	20 Years	User using the EISAs on a daily basis
INT #27	8 Years	User using the EISAs on a daily basis
INT #28	5 Years	User using the EISAs on a daily basis
INT #29	20 Years	User using the EISAs on a daily basis
INT #30	6 Years	User using the EISAs on a daily basis
INT #31	20 Years	User using the EISAs on a daily basis
INT #32	15 Years	User using the EISAs on a daily basis
INT #33	2 Years (contract)	User using the EISAs on a daily basis
INT #34	2 Years (contract)	User using the EISAs on a daily basis
INT #35	2 Years (contract)	User using the EISAs on a daily basis
INT #36	21 Years	Maintenance and support of ISAs
INT #37	31 Years	Maintenance and support of ISAs
INT #38	30 Years	Major stakeholder in ISA
INT #39	30 Years	User using ISAs on a daily basis

Appendix B: Background – History of student administrative system at the University

The University invested a lot of money and effort in redesigning its core student administration system (SAS) in the form of the Student Enrolment Management System (SEMS) programme (INT #1). Over a period of nearly ten (10) years, difficulties in delivering this proposed integrated solution were experienced throughout the SEMS programme lifecycle in meeting the objectives of the University and to a major extent, satisfying the users of the EISA. One of the main objectives of the SEMS programme was to alleviate the problems the University had been experiencing within the student enrolment process. The original estimation for the completion and roll-out of the integrated solution for the University was the end of 2009 (INT #1).

Before the decision was made to bring the SEMS programme to fruition, the ICT executive in charge at the University authorised the development of disparate IT systems using open source software (INT #1). The ICT Executive believed that Free and Open Source Software (FOSS) was the way forward for the University in developing EISAs according to the new vision of the University. He influenced and changed beliefs and attitudes through persuasion about FOSS amongst some of his peers and staff (INT #3).

During the 2001-2003 period, broad consultations were performed with users, but these consultations lacked structure and methodology. The consultation process was not planned properly, no particular methodology was employed to improve service delivery and the users invited or not invited to some sessions were not authoritative representatives of their faculty or department. The broad consultation decreased in the 2002-2003 and 2004-2005 periods and the culture of blaming ensued as a result of inferior products delivered during this time (Koster, 2008). The SEMS programme was a co-sourced initiative with the University's ICT department. The ICT management team was blamed for non-delivery and in some instances delivery of poor quality products. The overall management of the SEMS programme together with overall budgetary control was given to the SEMS programme manager (INT #1).

Prior 2008, the following findings were presented to the leadership of the University:

- No administrative innovation took place for the last 15 years, prior to 2008.
- Student enrolment constitutes several processes relating to the life-cycle of a student from admission to graduation.
- These processes are managed in different executive portfolios in approximately sixteen different offices or divisions (six processes rest with the Registrar).
- Efficiency of processes, particularly w.r.t. expedient decision-making, accountability, data integrity and communication were compromised by inadequate workflows and data integration.
- Work processes were largely paper-based and timelines and deliverables were not integrated or aligned optimally.
- Data integrity was compromised by lack of data management tools and processes.
- A silo-orientation existed and process innovation was aimed at improving departmental efficiency rather than institutional effectiveness.
- Tracking of administrative processes is not possible and management information is therefore not adequate to facilitate proactive operational management and mitigation of risks.
- An integrated workflow and clear roles and accountability are lacking.
- Enquiry management is not professionalised (“pillar-to-post”).
- There is no Enterprise Architecture strategy

The **SEMS programme** was initiated in 2002 in an attempt to address the communication and process alignment challenges of staff in the more than 16 offices concerned with student enrolment. The financial support of the SANTED project, the DOE Institutional audit report and the Institutional Planning Office was also instrumental in getting this project started in

2002. The primary focus of the project was to develop systems and in particular with the following attributes:

- to ensure the use of a single integrated database;
- to facilitate on-line processes and self-administration;
- to coordinate work-processes and time-lines across silos;
- to facilitate role-clarity, tracking and monitoring of administrative transactions (security, authorisation, escalations, accountability); and to enable pro-active risk mitigation improving retention and throughput.

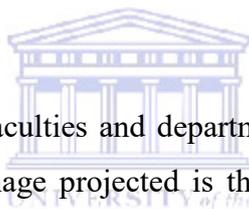
The project management approach

The 2004-2005 and 2006-2007 period saw the formulation of project teams and the consultation increased with selective users. The scope of SEMS were re-defined and approved in the 2006-2007 and 2008 period with proper structures that resulted in a common purpose across the University (INT #1). Originally applications were developed using Free and Open Source Software (FOSS). These applications delivered using FOSS did not meet the requirements of the users and were not accepted and used by the faculties and departments concerned. Some users felt alienated during this period and resented the fact that the SEMS programme manager now controlled the budget of the SEMS programme. Certain ICT managers felt that the SEMS programme manager was given too much authority and power (INT #3).

A need, however, to differentiate the grey area around the alignment of performance measurement (strategic strength), still exists. An old saying re-emphasised by Puth (2002), clarifies the above grey area, “What gets measured, gets managed”. Bauer (2004) emphasises that those things which are not measured, merits little or no attention ...”. The SEMS programme development undertaken at the University is no different from what research has found over the last couple of years. What was intended as an estimated two year programme, turned out to be an elongated engagement spanning more than a decade (INT #3).

Establishing an organisational change management (OCM) plan is crucial because software efforts are designed to change a business. Under no circumstances is this research underestimating the enormous task undertaken by the University's project team members (PTM) to produce a fully integrated administrative system. The Student Administration System Integration is depicted in Figure 6, which outlines some of the challenges faced by the PTM and the various business units staff mandated to deliver on this vision. The framework highlights the interrelated objectives of the various components forming part of the EISAs architectural design.

In the early part of the SEMS programme there is evidence in certain minutes of meetings that tension grew between the ICT executive, the Registrar and some faculty and departmental staff at the University. In some instances the ICT executive tried to justify and defend the methods and outputs of the programme, whilst the Registrar was concentrating on the intended value-add for administrative staff using the outputs of the SEMS programme at the time (INT #1).



Aggravating this tension between faculties and departments was the 'loose coupling effect' espoused by Weick (1975). The image projected is that student administration and all the faculties and departments are somehow attached, linked serving a common purpose when it comes to students at the University. Each faculty and department retains some identity and separateness in order to foster autonomy. The manner in which the software development was initiated, presented and used captures a different set of realities within this educational organisation compared to other higher educational organisations when these same organisations are viewed through the tenets of bureaucratic theory (Weick, 1975). Whoever could, tried to change the end result of the SEMS products, which was designed and intended for usage within the student administrative process at the University.

Complete lack of structured acquisition of business requirements contributed largely to the prevailing unstructured method of producing a viable solution (ISA) for the University, coupled with the lack of any known methodologies to achieve such. It is evident from above that the management in charge of producing the EISA adopted new approaches and placed

their reliance on new panaceas. The University got very little sustainable value-add in the process (INT #1).

During the interview process of certain users in the ICT department, the term SDLC was often used. After analysing the document outlining the SDLC approved methodology, the researcher observed that it is a well written reference document commonly used as a glossary of terms. It lacks impetus, and it is open to be interpreted as just another aimless product. This supposedly SDLC document was not even considered as a possible methodology by the external service provider (ESP) who was contracted by the University to implement the suggested enhancements to the student administrative system.

Adapting to change

The ability to adapt to frequent changes has emerged as a new paradigm for successful business operations. Legacy systems are replaced by newer, more efficient and effective ISAs. What about the users who used those legacy systems efficiently and effectively according to their internal measures and control? The initial observation and quick assessment by the researcher revealed a scenario that the EISA are not being used as intended. The conceptual framework as outlined in Chapter 1 is to firstly discuss the prevalence of misbehaviour and then employ a historical perspective to search the literature for previously proposed typologies and definitions of employee misbehaviour. Psychologists define attitude as a learned tendency to evaluate things in a certain way. This can include evaluations of people, issues, objects, events, ideas or just about anything in your environment (Zimbardo, 1999). Such evaluations are often positive or negative, but they can also be uncertain at times. We tend to assume that people behave in accordance with their attitudes. However, social psychologists have found that attitudes and actual behaviour are not always perfectly aligned.

Appendix C: The Student administrative environment before SEMS

An external vendor was mandated by the strategic core leadership of the SEMS programme to perform an analysis of the current information applications environment and to produce a report outlining their findings. This report forms part of the information used by the leadership at the University in 2008, to authorise the building of an integrated student administration solution with the focus of a single source of correct information. The output presented outlines the vendor's findings which are presented in tabular format in Table 5.0.

Table 5.0: The environment analysis before SEMS

Application / Infrastructure	Status / Remarks
The Chisimba environment	<ul style="list-style-type: none"> • Unstable framework • Not suitable for business applications • Could not find proof that it would work for SEMS • Documentation was incomplete
The old Financial Aid system	<ul style="list-style-type: none"> • Did not satisfy the business needs • The system was used infrequently and/or Not used at all • No integration to the core Student admin system • No specifications available
The Student credit	<ul style="list-style-type: none"> • Very unstable

<p>management system</p>	<ul style="list-style-type: none"> • Not satisfying the business needs • No integration to the core Student admin system • No specifications available
<p>The Residence Management System</p>	<ul style="list-style-type: none"> • Very unstable • Not satisfying the business needs • No integration to the core Student admin system • Business specifications, but no technical documentation.
<p>The Academic Programme (AP)</p>	<ul style="list-style-type: none"> • Very unstable • Not implemented • No integration accommodated for in the design • Business specifications, but no technical documentation • CRITICAL CORE Component for the integration component of the SEMS solution
<p>Marks administration system (MAS)</p>	<ul style="list-style-type: none"> • Built as stand-alone system, not designed to integrate with other systems • Enhancements to original code did not comply to standards
<p>Linc (aka FINSYS)</p>	<ul style="list-style-type: none"> • Legacy design (been in use for 15-20 years) • Approach of single source of correct

	<p>information not followed</p> <ul style="list-style-type: none">• Enhancing would be more work than re-write• No system/design documentation
Documents Management System (DMS)	<ul style="list-style-type: none">• Product was never implemented• Used Lotus Notes• Could not be re-used• Did use the specification as input
Warehouse	<ul style="list-style-type: none">• Redundant• Models can be re-used, but extraction and presentation layer must be re-written



Appendix D: Student enrolment programme

In order to gain the upper hand in today's fast paced technologically enabled environments, management teams need to understand the importance of improving business efficiencies through people. In the absence of known policies to motivate and keep employees focused within their work environments, the organisation face the risk of losing valuable employees and finding and retaining future employees. As the environment that these employees find themselves in changes, management teams have to find ways to constantly engage their staff (Bartlett and Ghosal, 2002). Changes to their work environment at times can be as a result of governmental or legislation-enforced changes.

Nearly two decades ago, it was generally reported that IT managers grapple with some issues pertaining to legacy IT systems. Comparing the issues experienced in the past to the current IT environment, more or less the same issues are applicable when it comes to the maintenance and support of legacy application systems. These issues translate to the fact that a legacy systems is resource intensive; it is expensive to support and maintain; the timeframe required to replace the system(s) is too long and costly; the infrastructure used at inception is out of sync with the current business strategies, policies and procedures and lastly, the archaic legacy system cannot make use the newer more effective technology offerings (INT #1). The latter includes migrating application systems onto a cloud based solution, as an example. According to an interviewee (INT #3), the policy employed at the University during his tenure, as one of the operational IT managers at the University, was to 'sweat the assets', i.e. increase the longevity of certain infrastructural assets even though the risks associated with doing so were very high.

The relevance and appropriateness of above focuses around the main research question of this research with regard to the current legacy system in use at the University. The current maintenance of the core student EISA at the University is resource intensive. Therefore to maintain and make additional enhancements or add additional features to this EISA, takes vast efforts, whether in resource utilisation or financially (INT #1). This was also evident

from the perusal of some correspondence between project team members entrusted to enhance and maintain the EISAs at the University throughout this research.

According to the opening remarks made by the Minister (ICT Indaba CCIC, 2012), the recent success of certain global economies has occurred as a result of the prominent role of computer-based information systems and modern telecommunications, and this has further heightened the global interest in IT. Managers the world over are seeking to improve business performance through the effective and efficient use of information systems. It is unfortunate that organisations have invested in information technology (IT) without realising major benefits. Davison and Jordan (1998) suggested that the efforts put in by organisations are inconsistent with the prevailing societal and organisational culture. They also argue that organisations have failed to build a culture to support change.

However, as various IT solutions and/or products provide growing levels of global interactivity and interconnectivity, we are made conscious of the cultural differences that exist across societies. The realisation exist that it is not easy to transfer and replicate an information system into different societal cultures (Davison and Jordan, 1998). The research undertaken thus on the impact of cultural issues on IT and business management yielded suggestions attributable to culture by comparing and contrasting phenomena in a few countries and organisations. The literature reveals only limited research attempting to understand the reasons for the differences that have been observed. As a result, we are limited in our current understanding of how and why specific attributes, besides culture alone, affect the planning and implementation of IT-enabled business processes. At the University, technology and business administrative managerial staff have been left to cope with varied cultural issues without being able to draw on empirically-tested prescriptions or the experiences (successful or otherwise) of others (Koster, 2008).

In an open letter to the Cleveland Ohio University, The Rector and Vice Chancellor at the University posited the University leadership is neither naive nor “Pollyannaish” in its understanding that the arc of activities underway at the University in general and in particular in the ICT area lead to organisational stresses and stretch goals that will necessarily lead to the need to confront basic human responses to the ‘threats’ of change and disruption to the

status quo. He raised concerns about Management Accountability and Commitment to Values-Led Organisational Development. He believes there is an opportunity to build on the strength and collegiality of the ICT organisation's middle management group. They are not yet a team in the sense of collective feeling and commitment to joint ownership of the management of the future of ICT, nor have they a sense of mutual commitment to one another. In moving ICT forward at the University, some consideration should be given to a formal engagement on organisational development. Such activity will carve out precious time for the management team to articulate their individual and collective value systems and how they inform their professional commitments to each other, ICT, and the University.

The components of the SEMS programme led to the usage of new management information systems and, simultaneously, changed its administrative and technical structures. The original intention, as stated by the University's Registrar (late), was that the approach would be to adopt a completely integrated system across all aspects of student administration, leading to the envisioned total integration of its ISAs. This was part of a wider trend towards, for example, the breakdown of the perceived silo-orientation in existence at the University. Process innovation was aimed at improving faculty/departmental efficiency rather than institutional effectiveness. It therefore appeared a particularly rich environment to explore in depth particular issues inherent in the focus of the research.

During the 2001-2003 period broad consultations were performed with users, but these consultations lacked structure and methodology. The consultation process was not planned properly, no particular methodology was employed to improve service delivery and the users invited or not invited to some sessions were not authoritative representatives of their faculty or department. The broad consultation decreased in the 2002-2003 and 2004-2005 periods and the culture of blaming ensued as a result of inferior products delivered during this time (Koster, 2008). The SEMS programme was a co-sourced initiative with the University's ICT department. In the early stages of the engagement, the ICT management at the University was partially blamed for non-delivery and in some instances delivery of poor quality products. The overall management of the SEMS programme together with the overall budgetary control was given to the SEMS programme manager (INT #1).

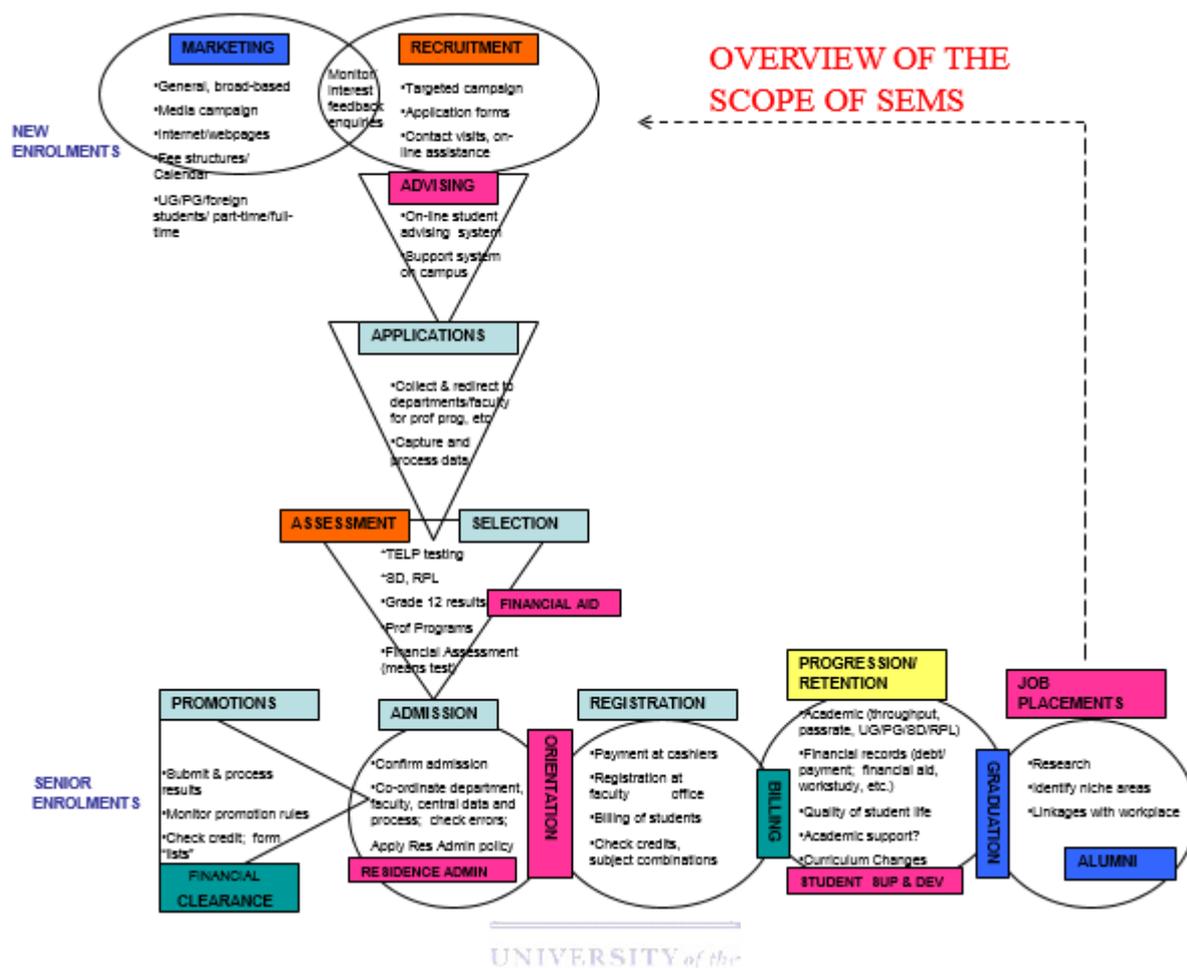


Figure 6: Overview of the Scope of the SEMS Programme

The 2004-2005 and 2006-2007 periods saw the formulation of project teams and the consultation increased with selective users. The scope of SEMS was re-defined and approved in the 2006-2007 and 2008 period with proper structures that resulted in a common purpose across the University (INT #1). Originally applications were developed using Free and Open Source Software (FOSS). These applications delivered using FOSS did not meet the requirements of the users and were not accepted and used by the faculties and departments concerned. Some users felt alienated during this period and also resented the fact that the SEMS programme manager now controlled the budget of the SEMS programme. Certain ICT managers felt that the SEMS programme manager was given too much authority and power (INT #3).

Henceforth, the applications were then supposedly re-developed within the right structures and methodology (Koster, 2008). The SEMS journey from 2001 to 2008 is outlined in Figure 7.

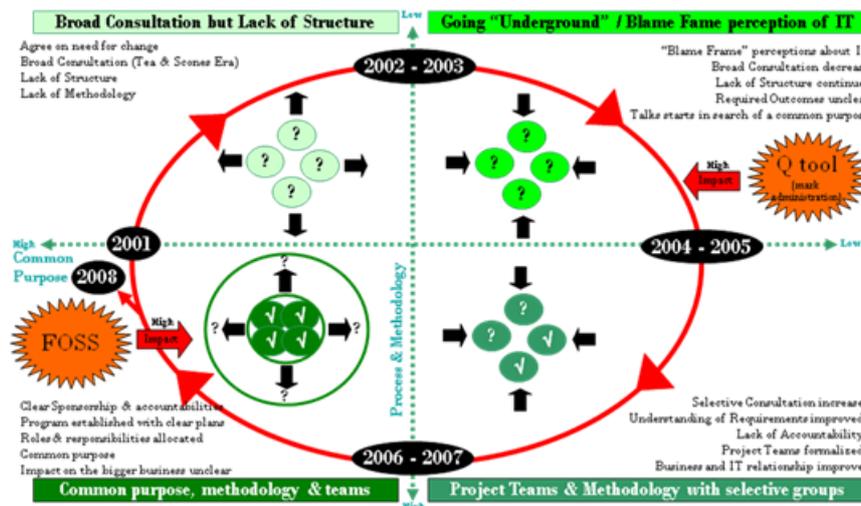


Figure 7: SEMS journey through time (Koster, 2008)

The SEMS programme development undertaken at the University is no different from what researchers have found over the last couple of years. What turned to be an estimated two year programme, turned out to be an elongated engagement spanning more than a decade (INT #3).

Architectural design

The overview of the scope of the SEMS programme in Figure 6, highlights the interrelated objectives of the various components forming part of the core student administrative architectural design. Academic Programme (AP) is the core component of the integrated solution of the student administrative system (SAS) at the University. This is a central location of where all data and information regarding, faculties, programmes, modules and module combinations are stored (INT #1). Due to the integrative nature of the student administrative system, both online and assisted registration functions (on campus) are ultimately dependant on the AP. Together with the timetables, AP and the student record forms the basis for registration on the EISA. Therefore, it is imperative that all users

concerned understand the importance of the correctness of data in the AP as this will determine a student's module choices which will in the end influence the student's completion of his/her studies at the University (INT #1).

Additional requirements

Throughout 2012, multiple application amendments/changes are scheduled to be applied to the core of the EISA at the University i.e. the in-house, co-developed student administrative system. Some of the changes will again challenge some users with respect to how they perceive the value add of the student administrative system to their faculty and/or department. Some of the major proposed amendments will also influence how EISA operates in its entirety with all the bespoke, disparate purchased COTS software applications (INT #3).

The changes are in response to changing conditions and requirements in the administration of student affairs at the University. Additional changes to the overall centralised functionality of the student administrative system will include software applications like the Student Tracking System (STS), Student Credit Management (CRM), Committee Management System (CMS), Residential Management System (RMS), Student Disciplinary System (SDS), the redesign of the service desk and call centre operations (INT #2), and changed technological possibilities through the implementation and usage of the Microsoft product, Sharepoint (INT #3).

In addition, the systems and application changes have arisen from the manner in which the centralised student administrative system and disparate systems actually fit into the enterprise portfolio of the student administrative system and the stakeholders they represent. Some of these users of the student administrative system include academics, administrative officers, internal and external IT professionals (INT #1). Some of these external IT professionals include the external service provider responsible for the major enhancements to the student administrative system over the last decade. Thus for the two systems, the student administrative system and output of the SEMS programme, that were originally thought to be useful in a straightforward manner, the outcomes have been different compared to what was originally intended and choices made over the last decade are being questioned and

challenged (INT #38). The fit-for-purpose questions and challenges have been forthcoming for the last decade or more.

