



POLYTECHNIC OF NAMIBIA

HAROLD PUPKEWITZ GRADUATE SCHOOL OF BUSINESS

*Change Management Strategies for an Effective Enterprise Resource Planning
Implementation: A Case Study of Government Institutions Pension Fund*

Bridgette L. Sitrer

Student Number: 200997475

**Research project submitted in partial fulfilment of the requirements for the
degree of Masters in Leadership and Change Management in the Harold
Pupkewitz Graduate School of Business at the Polytechnic of Namibia**

Supervisor: Prof. Frank Witt

December 2013

DECLARATION OF ORIGINAL WORK

I, Bridgette Lorelli Sitler, declare that this Thesis/Mini-thesis is my own unaided work. Any assistance that I have received has been duly acknowledged in the thesis/mini-thesis.

It is submitted in partial fulfillment of the requirements for the degree of Master of Leadership and Change Management at the Polytechnic of Namibia through the Harold Pupkewitz Graduate Business School (HP-GBS), Windhoek, Namibia. It has not been submitted before for any degree or examination at this or any other Institution of Higher Learning.

Signature Date

RETENTION & USE OF THESIS

I, Bridgette Lorelli Sitler being a candidate for the degree of Master of Leadership and Change Management accept the requirements of the Polytechnic relating to the retention and use of Master's theses/mini-theses deposited in the Library.

In terms of these conditions, I agree that the original of my thesis deposited in the Library will be accessible for purposes of study and research, in accordance with the normal conditions established by the Librarian for the care, loan or reproduction of theses/mini-theses.

Signature Date

ACKNOWLEDGEMENTS & DEDICATION

I would like to express my sincere thanks to the following individuals for their contribution, patience, and endless support towards the completion of this study

1. My mom, family and friends, for their unconditional support and patience during this entire process;
2. My partner for being there for me during my studies;
3. My boss and colleagues for their encouragement, assistance and support;
4. The participants of this study, for their willingness to participate in this study;
5. My mentor Karl.

List of ABBREVIATIONS

BPR	Business Process Engineering
CSF	Critical Success Factors
ERP	Enterprise Resource Planning
FIN	Finance
GIPF	Government Institutions Pension Fund
GM	General Manager
HR	Human Resource
HRMIS	Integrated Human Resource Management Information System
IFMIS	Integrated Financial Management Information System
GIMIS	Government Institute Management Information System
IS	Information Systems
IT	Information Technology
PwC	PricewaterhouseCoopers

List of Tables

Table 1.1 Definitions

Table 4.1 Participants' Profiles

LIST OF FIGURES

Figure 2.1 McCarthy Three Legged Stool

Figure 2.2 Lewin's Three-Stage Process of Change

Figure 2.3 Calvert Change Model

Figure 2.4 Adapted Model Lewin's (cited in Burnes, 2009) and Calvert (2006_ and Nah et al. (2001)

Figure 3.1 Research Flow

Figure 4.1 Themes and Sub-themes

Figure 4.2 Change process

Figure 4.3 Critical Success Factors

Figure 4.4 Change Management Strategies

Figure 6.1 IFMIS overall implementation

Figure 6.2 HRMIS Overall Implementation

Figure 6.3 IFMIS Graphical Presentation of the implementation status of business requirements

Figure 6.4 HRMIS Graphical Presentation of the implementation status of business requirements

TABLE OF CONTENTS

List of ABBREVIATIONS	V
List of Tables	V
LIST OF FIGURES	VI
CHAPTER 1: BACKGROUND AND STATEMENT OF PROBLEM	5
1.1 Introduction.....	5
1.2 Background	5
1.3 Problem Statement.....	6
1.4 Significance of the Study	7
1.5 Research Question.....	8
1.6 Aims/Objectives of this study.....	8
1.7 Limitations	8
1.8 Delimitations	9
1.9 Ethical Considerations:.....	9
1.10 Definitions.....	9
1.11 Thesis Outline:	11
1.12 Summary:.....	11
CHAPTER 2: LITERATURE REVIEW	13
2.1 Introduction.....	13
2.2 Description of the background.....	13
2.3 Conceptual Frameworks on Change Management	17
2.3.1 System Thinking on Implementation of ERP	19
2.4 Change Management Strategies:.....	20
2.4.1 Lewin’s Three-Step Model on Implementation strategies	21
2.4.2 Change Management Strategies the Calvert Model	23
2.4.3 The Ten Identified Change Management Mechanisms	25
2.5 ERP Processes:.....	28
2.5.1 ERP Defined	28
2.5.2 ERP Implementation Process	29
2.6 Effectiveness and Efficiency	29
2.7 Benefits of Enterprise Resource Planning Systems	29
2.8 Critical Success Factors: (CSF)	30
2.8.1 Critical Success Factors Defined	30
2.8.2 Factor Discussion	31
2.9 Conceptual Framework	36
2.10 Summary	38

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY	39
3.1 Introduction.....	39
3.2 Research Design.....	39
3.2.1 Research Strategy or Approach	40
3.2.2 Basic Characteristics of Qualitative Research	40
3.3 Methodology	41
3.3.1 Research Questions	41
3.3.2 Research Objectives	41
3.3.3 Data: Population and Sample	42
3.4 Research Instruments	44
3.5 Data Collection Method	45
3.6 Data Analysis:	46
3.6.1 Content Analysis	46
3.7 Limitations and Demonstration of the quality and rigour of the research design	46
3.8 Ethical Considerations.....	48
3.9 Summary	49
CHAPTER 4: DATA ANALYSIS AND PRESENTATION	50
4.1 Introduction.....	50
4.2 Description of the Sample	51
4.3 Themes	57
4.4 Interpretation and Analysis of Themes:	57
4.4.1 The Change Process	58
4.4.2 Critical Success Factor	64
4.4.3 Change Management Strategies	74
4.5 Reliability of Instrument	79
4.6 Validity of Instrument.....	79
4.7 SUMMARY	79
CHAPTER 5: DISCUSSION	81
5.1 Introduction.....	81
5.2 Discussion of Results	81
5.2.1 Research Sub-Question 1	81
5.2.2 The Research Sub-Question 2	84
5.2.3 The Research Sub-Question 3	89
5.3 Summary	96
CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS.....	98
6.1 Introduction.....	98

6.2	Discussion of Objectives	98
6.3	Limitations	106
6.4	Recommendations	106
6.5	Recommendation for further studies	107
6.6	Final Remarks	107
	REFERENCES	108
	Appendix A	115

ABSTRACT

This study is about information system research. It is an information systems research case study on GIPF ERP Implementation. The management replaced the Accountmate system with Oracle E-Business suite in 2009, as the best Enterprise Resource Planning solution.

Research has shown that large IT projects such as ERP sometimes don't meet expectations. Therefore, the GIPF CEO then commissioned a post-implementation review by Ernst & Young which found in 2012 that the business processes were not aligned to the system.

The objectives of this research is to critically assess and understand the change management approach undertaken to implement the ERP at GIPF, to uncover the critical success factors that facilitates the implementation of the ERP system and to trace important mechanisms leading towards how ERP systems can be implemented effectively

A qualitative approach was applied using an interview guide on a purposefully selected sample of 10 core team members that were directly engaged with the ERP implementation. Half the sample was from the SILNAM consulting company.

The results were that affirming the Ernst & Young review, there were change management strategies and critical success factors that were not efficiently managed throughout the implementation.

It is recommended that proper training on system functionality should be given on similar projects; Proper BPR should be mapped on system business processes; a proper help desk system was needed; top management should support the process; organisational culture should be evaluated for positive change and conduct an organisation readiness assessment before commencement in all instances.

Further studies need to be done on ERP to replicate similar case studies, for contribution towards knowledge.

Key words: Change Management; Oracle E-Business suite; Enterprise Resource Planning; Critical Success Factors, Business Process Re-engineering; Training; Organisational Culture.

CHAPTER 1: BACKGROUND AND STATEMENT OF PROBLEM

1.1 Introduction

This chapter discusses the purpose, importance and relevance of this research study to information systems research and in particular to Enterprise Resource Planning (ERP) implementation within the Government Institutions Pension Fund (GIPF) as a case study. Finally, an outline of the remainder of the chapters is provided.

1.2 Background

“Enterprise Resource Planning (ERP) system is a business management system that comprises integrated sets of comprehensive software, which can be used, when successfully implemented, to manage and integrate all the business functions within an organisation. These sets usually include a set of mature business applications and tools for financial and cost accounting, sales and distribution, material management, human resource, production planning and computer integrated manufacturing, supply chain and customer information.” (Al-Nafjan & Al-Mudimigh, 2011:1).

Huang et al., (cited by Otiena, 2010) argued that ERP systems promise to improve an organisation’s key performance indicators such as proficiency, efficiency, profitability, customer satisfaction and other measures of value. On the other hand, ERP systems are highly complex and the implementation difficult and a costly process, placing tremendous demands on corporate time and resources.

According to Al-Mashari (2003) implementing ERP systems in many instances caused dramatic changes that need to be carefully administered to reap the advantages of an ERP solution. Shehab et al. (2004), point out that although organisations spend millions on ERP packages and implementation process, there is extensive evidence that they experience considerable problems, particularly during the actual implementation.

The Government Institutions Pension Fund (GIPF) was established on the 1st of October 1989 to provide pension benefits to employees in the service of the Namibian Government as well as institutions established by Acts of Parliament. The operations of GIPF are guided by the provisions of the Pension Fund Act of 1956. GIPF is the biggest fund in Namibia, according to the GIPF Annual Report (2012). It had an active membership of 72,371 and total assets of N\$ 61 billion at the time. The fund comprises approximately 70% of the Namibian pension fund industry.

In 2008 the GIPF executive management made a strategic decision to implement a new financial and human resource management system. The main reason for change being failure of the existing technology in keeping up with business requirements.

A decision was taken after reviewing all the submissions made by the different consultants, that the Oracle E-Business suite was the best ERP Solution. The system was implemented and took-off in April 2009 and is currently in operation.

The purpose of this study is to assess whether change management strategies were used with the implementation of an ERP system in the GIPF.

The Study will analyse:

- The change management strategies followed in the implementation of the ERP
- The critical success factors that facilitate the implementation of the ERP system
- How ERP systems can be implemented effectively

1.3 Problem Statement

Large Information Technology (IT) projects, like ERP, often fall short of expectations. In fact, in a recent report cited by Hornstein in reference to the Standish Group, only 32% of IT projects were completed within scope, cost and time. Forty-four percent (44%) of projects were late, over budget or did not have required functionality. Twenty-four percent (24%) of projects were cancelled prior to completion. Research from Oxford University also revealed that 93% of IT projects failed to some extent: 60% failed to some measure and 33% failed catastrophically (Hornstein, 2008).

Adams and O'Doherty (cited in Jha and Joshi, 2007) stated that these failures often resulted from senior management's lack of understanding of the degree of changes involved in implementation. Implementing an ERP system was a challenging endeavour. Implementation was both complicated and difficult as the product spanned functional silos and involved many internal and external entities.

Otiena (2010) suggested that in recent years there has been an increase in using Enterprise Resource Planning (ERP) systems in large companies and government corporations mainly in developed countries. While there was wide adoption of ERP systems in Western economies, developing countries lagged far behind. Otiena (2010) argued that there was an urgent need for understanding ERP implementation issues in developing countries, as ERP systems were still in their early stages in these countries or in developing countries, ERP system implementation was in its early stage. It has been found that reasons like limited capital, non-availability of resources, poor management

base, and absence of IT expertise were seriously affecting the implementation and adaptation of enterprise systems in developing countries compared with developed countries (Aarabi et al., 2011).

According to Jain (2010) despite a significant body of research, the issue of IT value remained complicated and poorly understood partly because of the lack of understanding of the process through which such benefits were realized. The Enterprise Resource Planning (ERP) systems represented one such set of technologies. They were not only complex but could also impact various business processes within an organisation at differential rates.

ERP implementation was still a new concept in developing countries, even in Namibia. The top management does not really understand the full impact of ERP implementation within their organisations. They mostly focus on the technical aspect of the implementation and often neglect to take the organisational issues into consideration. They rely heavily on consultants that do the implementation which primarily use their own methodology. This methodology mainly focused on the technical implementation, and often neglected the organisational aspects that would be affected.

1.4 Significance of the Study

Ernst & Young was appointed in 2012 by the Chief Executive Officer of GIPF to perform a post implementation review of the Oracle IFMS and HRMIS. The findings of the Post Implementation review has indicated that the business process were not properly aligned to the system, manual workarounds and that there were insufficient awareness of the functionalities of the system.

This study will assist GIPF executive management to identify change management strategies that would assist them in future ERP system reviews and implementations.

The findings of this research are expected to be of importance to various stakeholders. GIPF and its stakeholders can learn from the successes and failures of the case study and therefore, avoid consequences which can lead to ineffective ERP implementations.

By exploring issues around implementation the study can contribute to the area of ERP evaluation and the impact of ERP systems on organisations in Namibia.

1.5 Research Question

Main Research Question:

What is the change management approach undertaken to implement ERP at GIPF, and how can the application of change management strategies enable a more effective ERP implementation?

Sub-questions

1. What is Change Management theory and how is it applied to ERP implementations?
2. What are the most important critical success factors that will facilitate the result of the ERP implementation?
3. What are the most important mechanisms of effective change management in the implementation of ERP Systems?

1.6 Aims/Objectives of this study

Overall objective:

In this research, the primary objective is to critically assess and understand the change management approach undertaken to implement the ERP at GIPF in 2009.

Sub-Objectives:

- To identify change management theories that can help explain ERP implementation;
- To uncover the critical success factors that facilitates the implementation of the ERP system;
- To trace important mechanisms leading towards how ERP systems can be implemented effectively.

1.7 Limitations

The limitation is that the case study is based on the implementation that was done at GIPF and that the study does not represent a wider social setting and therefore the results of the research cannot be used to make generalisations.

The study is limited to GIPF and the results obtained may not be generalised. However, the results shall provide valuable insights to the managers within GIPF and others involved with the ERP implementations.

1.8 Delimitations

The research scope is delimited to focusing on the Change Management strategies of ERP implementations.

1.9 Ethical Considerations:

Semi-structured interviews shall be conducted exposing individuals to disclose thoughts and feelings which are clearly private. Care shall be taken on types of questions to be asked, issues of confidentiality and at times anonymity shall be thoroughly assessed and maintained.

This study shall pay due regard to the autonomy of research participants, minimize the risks associated with research and ensure a fair distribution of the risks and benefits resulting from the research. (Mack, Woodsong, MacQueen, Guest, & Namey, 2005)

1.10 Definitions

Enterprise Resource Planning (ERP) In its basic definition, ERP is an enterprise-wide information system that integrates and controls all the business processes in the entire organisation. The Enterprise Resource Planning (ERP) system is an enterprise information system designed to integrate and optimize the business processes and transactions in a corporation. The ERP is an industry-driven concept and systems, and is universally accepted by businesses and organisational industries as a practical solution to achieve an integrated enterprise information system solution. (Addo-Tenkorang & Helo, 2011)

System An ERP system may be defined as a packaged business software system that enables a company to manage the efficient and effective use of resources (materials, human resources, finance, etc.) by providing an integrated solution for the organisation's information processing needs (Nah et al., 2001).

Implementation The purpose of System Implementation can be summarized as follows: making the new system available to a prepared set of users (the deployment), and positioning on-going support and maintenance of the system within the Performing Organisation (the transition). At a finer level of detail, deploying the system consists of executing all steps necessary to educate the Consumers on the use of the new system, placing the newly developed system into production, confirming that all data required at the start of operations is available

	<p>and accurate, and validating that business functions that interact with the system are functioning properly. Transitioning the system support responsibilities involves changing from a system development to a system support and maintenance mode of operation, with ownership of the new system moving from the Project Team to the Performing Organisation.(Pataki, Dillon, & McCormack, 2003)</p>
<i>Change Management</i>	<p>Change management is the process, tools and techniques to manage the people side of change to achieve the required business outcome. Change management incorporates the organisational tools that can be utilized to help individuals make successful personal transitions resulting in the adoption and realization of change (Creasey, 2009, Pg.2).</p>
<i>Strategy</i>	<p>Strategy is an outline of how a business intends to achieve its goals. The goals are the set of objectives; the strategy sets out the route to objectives. Strategy, then, is the art of the possible, and needs to take account of time and resource available. (Henry, 2007, Pg 6-7)</p> <p>The term strategy has been defined in a variety of ways, but almost always with a common theme, that of a deliberate conscious set of guidelines that determines decisions into the future. (Mintzberg, 2009, Pg.3).</p>
<i>Effective</i>	<p>Subject matter which covers the degree to which objectives are achieved and the extent to which targeted problems are solved. In contrast to efficiency, effectiveness is determined without reference to costs, whereas efficiency means “doing the thing right”, effectiveness means “doing things right ”. (Roumeliotis, 2012).</p> <p>Effectiveness the extent to which stated objectives are met; the policy achieves what it intended to achieve. The goal can be as broad or as narrow as is deemed appropriate — a continuum exists, ranging from achieving very specific outputs. (Productivity Commission, 2013).</p>
<i>Critical Success Factors:</i>	<p>Critical success factors (CSFs) define key areas of performance that are essential for the organisation to accomplish its mission. Managers implicitly know and consider these key areas when they set goals and as they direct operational activities and tasks that are important to achieving goals. (Carali, 2004, Pg.11)</p>
	<p>Limited number (usually between 3 to 8) of characteristics, conditions, or variables that have a direct and serious impact on the effectiveness, efficiency, and viability of an organisation, programme, or project. Activities associated with CSF must be performed at the highest possible level of excellence to achieve the intended overall objectives. Also called Key Success Factors (KSF) or Key Result Areas (KRA). (BusinessDictionary,2011).</p>
<i>Oracle E-Business Suite</i>	<p>Oracle E-Business Suite (EBS), also commonly known as Oracle Applications, is a suite of business applications made up of a large number of distinct software modules. Some of the modules are: Oracle Financials, Oracle CRM, Oracle Supply Chain Application, Oracle Logistics, Oracle Order Management and Human Resources (HRMS).</p>

1.11 Thesis Outline:

Chapter 2 presents a review of the relevant background literature. The relevant studies are described and analysed in the context of the current research on the topic. It provides the reader with an overview of the field and offers clear definitions of important terms such as change management strategies, critical success factors and ERP Implementation. Chapter 2 is thus a comprehensive and contextualised literature review based on the research questions of this study.

Chapter 3 outlines the research methodology of the study. This chapter describes and justifies the research design, the population and the type of sample used. The chapter will also describe the data collection process and the way in which the data is analysed. Finally, the quality and rigour of the research design and research ethics are also addressed in this chapter.

Chapter 4 presents the results from the data analysis only. The data is presented based on the themes and categories uncovered in the research. A detailed discussion of the results is provided and findings highlighted in relation to the specific research questions mentioned in the introduction.

Chapter 5 focuses on discussing what the findings mean in relation to the theoretical knowledge and what the study's practical implications on the topic are. This chapter discusses the meaning of the results found in chapter 4. These results are set within the context of the research questions.

Chapter 6 The last chapter concludes the main points of the research and provides recommendations that are of importance. Drawing on research objectives, implications of the findings are highlighted and placed in reference to the literature review and how GIPF strategies are affected. Recommendations are made on best management practices for future and shortcomings of this study indicated in terms of what further research would be needed.

1.12 Summary:

This chapter presented the background and motivation for this study. The purpose of study was to assess whether change management strategies were used with the implementation of an ERP system in GIPF and how change management strategies

could facilitate a more effective ERP Implementation. In addition, the chapter focused on the background of the study, the problem statement, the specific research questions and the assumptions of the study. Finally, the chapter provided an outline of the remaining chapters.

The next chapter contains a comprehensive literature review of all research concerning change management strategies, critical success factors and ERP processes.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this section the theoretical background of the key variables within this study will be discussed and the mutual relationships among the variables will be examined on a theoretical basis. The major objective of this part is to present the relevant theoretical approaches and linkages regarding change management strategies and ERP Implementation. It shall also explore the thematic areas raised by the sub-research questions, in terms of critical factors facilitating ERP and mechanisms of effective implementation.

2.2 Description of the background

The Government Institutions Pension Fund (GIPF) was established on the 1st of October 1989 to provide pension benefits to employees in the service of the Namibian Government as well as institutions established by Acts of Parliament. The operations of GIPF are guided by the provisions of the Pension Fund Act of 1956. According to the GIPF Annual Report (2012) GIPF is the biggest fund in Namibia. It has an active membership of 72, 371 and total assets of N\$ 61 billion. The fund comprises approximately 70% of the Namibian pension fund industry.

According to the Annual Report (2012) the funds mission, vision and values are defined as follows:

Mission:

To safeguard and grow the Fund for the benefit of its stakeholders.

Vision:

To be a leading pension fund and a model corporate citizen in Namibia
The corporation upholds the core values of: integrity, service excellence and teamwork.
The GIPF executive management made a strategic decision in 2008 to implement a new financial and human resource management system. The main reason was that there was a need for change as it appeared that the technology that was in place was incapable of keeping up with the business requirements.

A memo dated 17 October 2007 that was submitted to the Tender Board stated the following summarised reason below as the motivation for acquiring a new system.

“GIPF made use of AccountMate as the financial system and HR Expert as the HR system. There were a number of problems that the organisation experienced with the two systems.

2.2.1 The problems identified with AccountMate:

- a) *On-going technical support was a big problem. There were no local resources available.*
- b) *The Development was done in the Philippines resulting in delays even for minor projects.*
- c) *Operational support was available from South Africa which still resulted in delays for urgent issues.*
- d) *The budget module did not meet the requirements of the GIPF.*
 - *Budget information was captured in Excel and then imported into AccountMate.*
 - *The budget module did not make provision for the commitment / encumbering of funds when orders were placed.*
- e) *The quality of the reports was not acceptable. The reports were done in MS Excel which resulted in duplication of effort, valuable time being wasted and delays in producing reports.*
- f) *The access control and security setup was below standard.*
- g) *The interface between AccountMate and GIMIS caused problems. This had a chain-reaction and caused problems in the benefit payments and reconciliation which were a high-volume and prone to mistakes.*
- h) *The bank reconciliation module caused constant problems with delays and inaccurate data reporting.*
- i) *The account structure did not adequately support a fully-fledged Activity Based Costing (ABC) model.*
- j) *No investment accounting module.*
- k) *The interface between the purchase orders and accounts payable was not complete resulting in invoices being recaptured for payment purposes.*
- l) *No interfacing with the HR system.*

2.2.2 The problems identified with HR Expert System:

- a) *Product knowledge from vendor was very limited.*
- b) *Staff turnover worsened the problems at the vendor regarding the lack of product knowledge.*
- c) *Initially a local company was involved, but were sidelined due to lack of product knowledge.*
- d) *A key resource (who was involved with the implementation at GIPF) located at the South African vendor, resigned.*

- e) *Development was not done locally – only in South Africa.*
- f) *Security has not been setup properly resulting in all the users using the database administrator's logon and password.*
- g) *Changes and customizations on the database and system were not documented.*
- h) *Data management has always been a problem. Data such as leave records were maintained using MS Excel and not HR Expert.*
- i) *Certain tax calculations could not be done. Additional changes and customizations was required.”*

Due to these problems the executive management decided to implement a new solution based on the following strategic considerations:

2.2.3 Oracle as the Database platform

- a) GIMIS (the system maintaining and managing the members and their related data) is utilizing Oracle. The financial solution need to integrate with GIMIS and such integration is less complex and more reliable if both systems use the same database platform.
- b) The GIPF invested a great deal in keeping the existing Oracle database up-to-date, as well as training the staff members to obtain the necessary Oracle skills and knowledge.
There exists the potential that the GIMIS transactional logic can be developed using Oracle development environment.

2.2.4 One supplier to provide integrated solution

- a) One supplier providing an integrated solution simplifies the management of the projects and minimizes potential technical issues (such as system integrations and future system upgrades).
- b) Provides one point of contact and ensures hassle-free performance review.

2.2.5 Availability of local support

- One of the problems with the existing Finance and HR systems was the lack of local support. To prevent the same problems from occurring local support was of cardinal importance.
- Local support also ensures a thorough hand-holding exercise for future needs and sustaining the relationship.

Due to motivations listed above GIPF decided it would be best to select an ERP solution. A decision was taken after reviewing all the submissions made by different consultants. Oracle E-Business suite was identified as the best ERP Solution.

2.2.6 The scope of the Project Implementation covered the following:

1. Interface to existing Systems of the GIPF (Payroll, GIMIS Member Database, FNB (PACS, BIZ, CAMS), Standard Bank – Investment Administration System.
2. Setup of Oracle Financials and Human Resource Management.
3. Data migration from existing GIPF Systems to the IFMIS/HRMIS.
4. Training of Functional / Technical Users on Oracle Products and Technologies for this project.
5. Post Production support to GIPF on the Implemented System.

GIPF awarded a contract to SILNAM IT Solutions Pty Ltd for the implementation of the IFMIS-HRMIS project (Tender Reference GIPF 006/2007 – Financial and HR Systems).

2.2.7 Post-Implementation

The system was implemented and launched in April 2009 and is currently in operation. In 2012 Ernst & Young was appointed by the Chief Executive Officer of GIPF to perform a post implementation review of the Oracle IFMS and HRMIS applications supporting the finance and human resource functions of the organisation respectively. According to the findings that were presented to GIPF on 30 March 2012, the purpose of the engagement was to assist GIPF in obtaining a current state assessment of the following:

- a) Implementation status of the recommendations made by PricewaterhouseCoopers (PwC) during the pre- implementation assessment performed in 2009; and
- b) Implementation status of implementation of functional user requirements defined by GIPF at the start of the IFMS and HRMIS projects.

2.2.8 After the post implementation phase, the following issues were identified:

- a) Insufficient awareness of and familiarity with features available in the system, resulting in IFMS and HRMIS not being used in an optimal manner;
- b) Impossibility to export reports available in the system into spreadsheet (Excel) format for further analysis. According to users, this results in significant time being spent in building spreadsheet reports from scratch (e.g. by manually re-inputting information maintained in the system into Excel);

- c) The requirements formulated by GIPF at the start of the IFMS and HRMIS projects took into consideration the possibilities offered by the system. Although the system has been implemented and set-up as per these requirements, the actual working practices have not been amended to align with the actual system workflows; and
- d) Users do not systematically raise system-related issues encountered or their required system changes to the GIPF IT team, so that appropriate action (such as update of system configuration to align to changes in management guidelines impacting system behaviour) may be taken. Instead, they tended to make use of manual workarounds which are time consuming and more prone to errors.

2.3 Conceptual Frameworks on Change Management

According to a comprehensive characterisation of the established paradigms in Management and Organisation Research by Astley and van de Ven (1983) four different views of organisational change are defined:

- (1) Change triggered by environmental selection pressure:

“Change: A natural evolution of environmental variation, selection and retention. The economic context circumscribes the direction and extend of organisational growth” (Astley & van de Ven, 1983: 247).

- (2) Change as a result of collective action (political bargaining, conflict of interest)

“Change: Collective bargaining, conflict, negotiation and compromise through partisan mutual adjustment.” (Astley & van de Ven, 1983: 247).

- (3) Change as an increase of system functionality (efficiency and effectiveness)

“Change: Divide and integrate roles to adapt subsystems to changes in environment, technology, size, and resource needs.” (Astley & van de Ven, 1983: 247).

- (4) Change as strategic Choice (proactive, management induced)

“Change: Environment and structure are enacted and embody the meanings of action of people in power.” (Astley & van de Ven, 1983: 247).

McCarthy (2010) has postulated the change management process as:

When one door closes another one opens, but sometimes it's hell in the hallway. Change management deals mostly with the hallway situation, facilitating the human transition from the present to the future. These days, change is ongoing and requires focused leadership if it is to be as fast and pain- less as possible.

Al-Mudimigh et al.,(cited in Al-Samaln & Al-Mudimigh, 2011) identified change management, in terms of adopting an ERP system, as activities, processes, and methodologies that support employee understanding and organisational shifts during the implementation of ERP systems and reengineering initiatives.

According to Roman (2010), change was inevitable when working on any large project or change initiative – especially with the implementation of an ERP system. McCarthy (2010) explained that it was important to understand why one should make an investment in the people side of a project bringing in the best technology possible. It doesn't mean anything unless users are comfortable and proficient in its use. *"The truth is just because you build it doesn't mean they will come"* McCarthy (2010).

In Smith (2005), it was people who made up organisations and it is they who are the real source of, and vehicle for, change. They were the ones who either embraced or resisted change.(Smith, 2005).He then further explained that ultimately employees – the targets of change – were central to the success or otherwise of change efforts. Their attitudes, skills, motivations and base knowledge formed a significant component of the organisational environment in which change was to be attempted (Smith, 2005).

McCarthy (2010) illustrated implementation factors through a project stool which represented the critical components of implementation: these are People, Process and Technology. In his study he highlighted that the people were most important. When a technology project failed, it was primarily due to a lack of use and not a failure of the software.

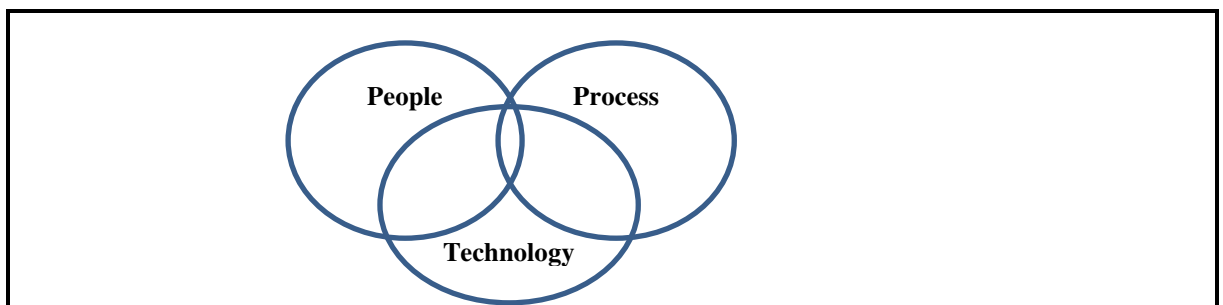


Figure 2.1: McCarthy Three-legged Stool Model (2010)

2.3.1 System Thinking on Implementation of ERP

Hornstein (2008) put forward a systems conceptual framework that has been developed by a number of academics and practitioners to help understand that organisations are made up of highly interdependent processes that are also impacted by the environment. This meant that the smallest intervention will have unanticipated influences on other parts of the organisation.

Supporting a similar view, Burnes (2009) of the open systems school, perceived organisations as composed of a number of interconnected sub-systems. It followed that any change to one part of the system would have an impact on other parts of the system, and in turn, on its overall performance. The open school's approach to change was based on a method of describing and evaluating these subsystems, in order to determine how they need to be changed so as to improve the overall function of the organisation. He further explained that this school does not just see organisations as system in isolations; however, they are open systems.

In support Miller argued (cited by Burnes,2009) that there were four principal organisational subsystems:

1. The organisational goals and values sub-system comprised of the organisation's stated objectives and values it wished to promote in order to attain them. To operate effectively, the organisations had to ensure that its goals and values were compatible not only with each other, but also with its external and internal environment
2. The technical sub-system was a specific combination of knowledge, techniques and technologies which an organisation required to function.
3. The psychosocial sub-system, this was variously referred to as the organisations climate and organisations culture. In essence, it was the fabric role relationships, values, and norms that bound people together and makes citizens of a particular miniature society (the organisation). It was influenced by an organisation's environment, history and employees, as well as its tasks, technology and structures. If the psychological sub-system was weak, fragmented or inappropriate, then instead of binding the organisation together, it may have the opposite effect.
4. The Managerial Sub-system: This spanned the entire organisation. It was responsible for relating organisations to its environment, setting goals, determining values, developing comprehensive strategic and operational plans, designing structure and establishing control processes.

Burnes (2009) further explained that the open systems school was concerned with understanding organisations in their entirety; therefore, it attempted to take a holistic rather than a particularistic perspective.

McCarthy (2010) argued that experienced technology adoption professionals embraced a systems perspective when given the assignment to drive performance, manage perceptions, and increase the utilization of new and existing technology. A systems approach was the ability to see the big picture and address the interrelationships among the variables within the fabric of the organisation and influence the combined impact these variables have on organisational effectiveness. As each variable has the power to influence the outcome of any intervention, behaviour change was often not sustainable because variables tend to work against one another. Effective technology adoption strategies account for this interrelationship/interdependency and aim to bring these variables into alignment as a means for driving sustainable results.

Al-Mudimigh et al., claimed (cited in Swaminathan, 2011) that ERP implementation was a process that involved macro implementation at the strategic level and micro implementation at the operational level. This therefore meant that implementation in the context of ERP systems is not possible through an ON/OFF approach whereby deployment of the new systems would necessarily yield the desired and expected results. Understanding the implementation process through a balanced perspective would therefore prevent any unpleasant surprises, and would ensure and guide the change process to be embedded in a painless fashion (Al-Mudimigh et al, 2001).

When looking at the ERP implementation one had to see how the different systems interacted with each other. Understand that if a change was made to the technical subsystem the other system would also be affected. The system should be monitored and studied as a whole during the implementation. If a problem arose then look at the system as whole and try not to focus only on the technical subsystem.

2.4 Change Management Strategies:

Any organisation introducing an ERP system as a new technology organisation needed preparations and strategies to avoid resistance by employees. To avoid rejection proper change management strategies needed to be applied when implementing an ERP solution.

In this context, Lientz and Rea (cited in Calvert, 2006) defined change management as, *“...the approach to plan, design, implement, manage, measure, and sustain changes in business processes and work.”*

According to Wanberg and Banas (cited in Calvert,2006) in terms of change management, the critical success factors were: overcoming resistance to change, effective communication, participation in change processes, self-efficacy for dealing with proposed changes, available support, and perceived impact of changes.

Ngai argued (cited by Alballaa & Al-Mudimigh 2011) that successful change management is brought about through the implementation of change management strategies.

2.4.1 Lewin's Three-Step Model on Implementation strategies

According to Carpenter, Bauer, & Erdogan (2010) one of the most useful frameworks in this area was the three-stage model of planned change developed in the 1950s by psychologist Kurt Lewin. This model assumed that change will encounter resistance. Therefore, executing change without prior preparation was likely to lead to failure. Instead, organisations should start with unfreezing, or making sure that organisational members are ready for and receptive to change. This was followed by change, or executing the planned changes. Finally, refreezing involved ensuring that change becomes permanent and the new habits, rules, or procedures become the norm.

Step 1: Unfreezing/Pre-Implementation

This step is a crucial step in which organisations needs to be aware and comprehend the changes that is occurring in their environments. In this step, organisations prepare to do the changes (Nizar et al.,2012).

Kwahk and Lee (2008) suggested creating the belief that organisational change was needed that required agreement that there was a gap between the current and desired end-states. In general, an ERP system is then introduced into a company to improve its organisational effectiveness and fill any performance gap. Organisational members who have favourable perceptions of organisational transformation and are ready for it will be more likely to participate positively in the change and expect enhanced performance after its implementation.

According to Aladwani (2001) the first step in effectively managing change introduced by IT was to identify and evaluate the attitudes of individual users and influential groups. He went on to say that the answer to these fundamental questions may offer a good starting point in determining the sources of employee resistance to the ERP system.

Smith (2005) concurred and suggested that by creating change readiness before attempts at organisational renewal, the need for later action to cope with resistance may

be largely avoided. An investment in developing change readiness – at both individual and organisational levels – could achieve a double benefit. Positive energy would go into creating preparedness for the changes and, in turn, there could be a significant reduction in the need for management of resistance once organisational revival is underway (Smith, 2005).

Step 2: Moving/Change/Implementation

Nizer et al., (2012) argued that in this step, the process of change begins to be implemented gradually. Organisations start to leave the old ways and then use the new ways. The changes must comply with the objectives and the desired situation after the changes.

Similarly Aladwani (2001) argued that management can use the knowledge regarding potential users from the previous stage to set up strategies that can best overcome users' resistance to the ERP system, and to convince as many users as possible to adopt it.

Step 3: Freeze

According to Nizar et al.,(2012) in this step, the desired outcomes or situations have been achieved; hence the changes need to be made permanent and strengthened by developing new rules and policies and also by creating a new culture related to the changes.

According to Vincent (2013) Refreezing, also known as freezing, is the act of solidifying the change that has been created thus far. When all the aspects of the change had been completed and the change has come to an end, the refreezing process needs to begin.

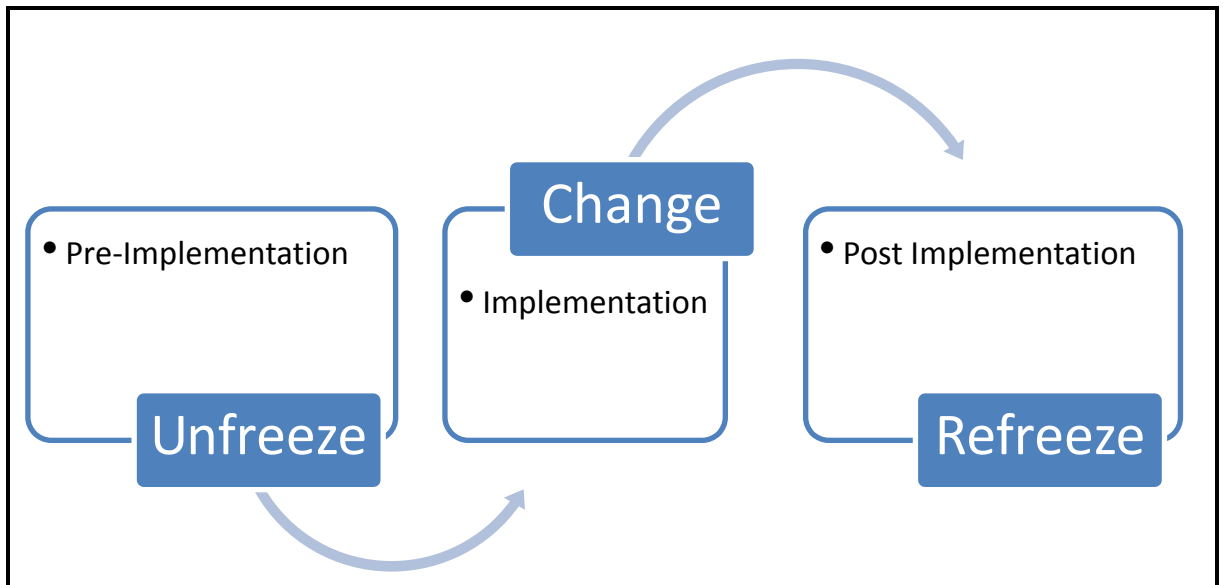


Fig 2.2 Adopted Lewin's Three-Stage Process of Change

2.4.2 Change Management Strategies the Calvert Model

According to Calvert (2006) different authors have different views on the scope of change management mandate.

In a model Aladwani (cited by Alballaa & Al-Mudimigh, 2011) explained change management from a marketing research approach. He suggested a process-oriented framework consisting of three phases: knowledge formulation, strategy implementation, and status evaluation. It assumed that change management and management support should positively influence system awareness, feelings towards the system and the intention to adopt that system for users to actually adopt the system.

Calvert (cited by Alballaa & Al-Mudimigh, 2011) argued that different authors had different views of the scope of the change management mandate, but they all include activities and introduce ideas that help end-users to learn and effectively use ERP. Typically, these activities start from setting the project's vision and end with any post-implementation activities (Calvert 2006).

Stressing the role of employees, Calvert (2006) argued that the ultimate dependent variable in the model is the individual's capacity to use an ERP system effectively, not organisational capacity. Individual capacity to use an ERP system effectively is conceptualised as being measured by three variables: the individual's cognition, skills, and affective behaviours.

Gupta and Bostrom (cited by Calvert,2006) explained that in relation to ERP systems, cognitive outcomes refers to knowledge about business processes, how these

are connected to other business processes, as well as the overall 'big picture' of what an ERP system is and how it benefits the organisation.

In further support, Gupta and Bostrom (cited by Calvert, 2006) put forward that skill-based outcomes focused on the user's ability to use the ERP to complete tasks or business processes. Affective outcomes referred to user's attitude to the system, willingness to embrace change, satisfaction with training, perceived usefulness of the application, motivation to use the ERP effectively, perceived anxiety in engaging with the ERP, and so on.

Calvert (2006) argued that an employee's capacity to use an ERP system effectively is driven in large part by an employee's motivation to learn and use the system. Similarly, Lientz and Rea argued (cited by Calvert, 2006) that ERP-using organisations engaged in change-management practices to stimulate their employees' motivations to embrace change and to attend to learning to use the ERP system effectively.

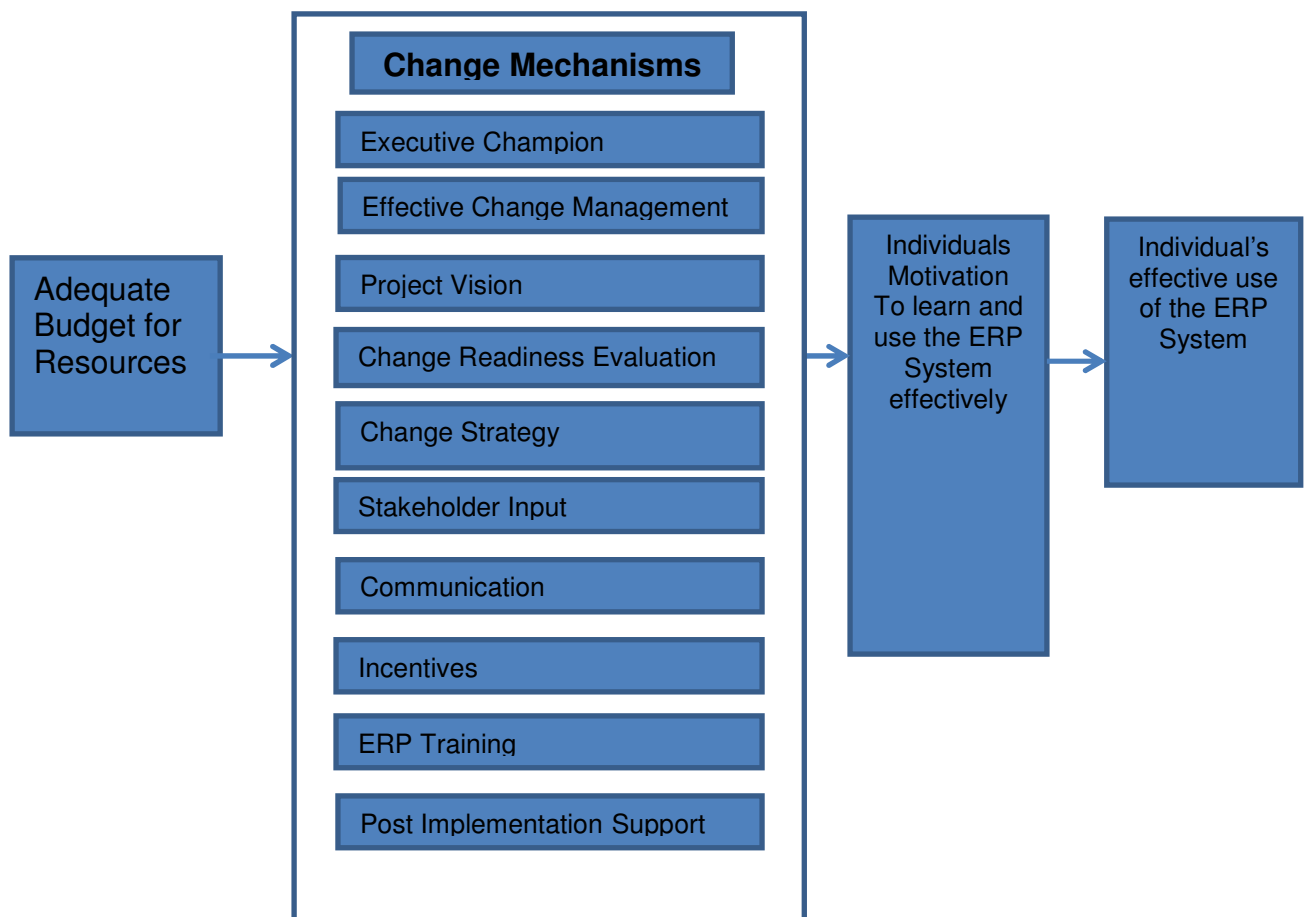


Figure 2.3: Adopted Calvert Change Management Model (2006)

2.4.3 The Ten Identified Change Management Mechanisms

1) Adequate Budget:

According to Calvert (2006) adequate budget for financial resources recognised the importance and foundation upon which the extent of the change mechanisms is determined.

Dong (cited by Calvert, 2006) posited that top management demonstrate a commitment to the implementation project by allocating sufficient resources to see projects to successful completion. Resources must be clearly identified and made available to middle managers and operational or frontline staff in order to successfully implement an initiative to support transformational change. Necessary resources may include additional staff, additional funding, training, administrative, technical, change management and project management support and communication tools (Berns, Charboneau, & Foth, 2007).

2) Executive Champion:

Nah et al., (2001) suggested that “A project champion is more important in ERP implementations than in other IS implementations because ERP success hinges on overall organisational commitment and perseverance.”

Alballaa & Al-Mudimigh (2011) stated that an executive supporter of the ERP initiative was an important motivator for change. The reason being as they are the ones who have the authority to effectively remove cross-departmental political obstacles.

3) Effective Change Team:

According to a survey by Jiang et al. (cited by Calvert, 2006), having competent project team members was the fourth most important IS implementation success factor.

In support, Alballaa & Al-Mudimigh (2011) advocated that it was preferred for the team members to be cross-functional, dedicated full-time to the task of managing. Moreover, Robey suggested (cited by Calvert, 2006) that in selecting a team, the organisation should try and limit its dependence on consultants.

4) Project Vision:

Reich and Benbasat (2000) argued that the vision helped create a shared understanding about the contribution of IT to organisational competitive advantage. For a vision to be effective, executive management must be seen to proactively sell the vision to key stakeholders (Clark et al. 1997). Furthermore, top management was to lead by example and live by the rules laid down by the vision (Paper and Chang 2005).

A vision specifies what the implementation project was meant to achieve and how it could make a positive impact on the organisation's employees to work towards its achievement Alballaa & Al-Mudimigh (2011).

5) Change-Readiness Evaluation:

Alballaa & Al-Mudimigh (2011) argued that testing for organisational readiness for change was just as important as analyzing technical feasibility. Both the readiness for change and the capabilities for making that change must be present for successful ERP implementation. In support, Benjamin and Levinson (1993) stated that support from a critical mass of end-users is needed to ensure effective change.

6) Change Strategy:

According to a study by Lientz and Rea (cited by Calvert, 2006) a change strategy was a formal plan that detailed the organisational elements that will be affected by the change (people, processes, organisational structures, policies, technology infrastructure, reward systems, facilities and location of the work, and corporate culture), and the tactics for introducing that change. Dong (2000) suggested that this plan must be tailored to the scope and pace of ERP implementation.

Calvert (2006) argued that all mechanisms were important, however, the weighting of resources devoted to each mechanism should be adjusted to reflect the scope and pace of ERP implementation.

7) Stakeholder Input:

Alballaa & Al-Mudimigh (2011) found that people responded favourably to the implementation of new technology when others listened to their suggestions and requirements.

Supporting the view Joshi (cited by Calvert, 2006) stressed the importance of establishing fair procedures for introducing change through user involvement and participation, bargaining, and negotiation with trade unions. Lientz and Rea (cited by Calvert, 2006) advocated involving stakeholders in setting the objectives of the change effort to assist with their subsequent buy-in of the project.

8) Communication:

The importance of communication was to educate about the project vision, to inform about the implementation project and to help overcome resistance to change. Bancroft et al., (cited by Calvert, 2006) recommended that employees at all levels who are affected by the new system needed to be informed by a rigorous communications programme.

Kotter (cited by Calvert, 2006) also suggested that communication comes in the form of both word and deeds; senior management should also convey meaning through their actions, because when words and actions are incongruent, change is undermined.

9) Incentives:

Alballaa & Al-Mudimigh (2011) called for the provision of incentives and or disincentives to help employees overcome resistance to change. Not only should incentives be offered to help staff overcome resistance to change, incentives also help to retain key implementation staff. An incentive can be a higher pay to those assigned to higher-level, skilled jobs or offering revised titles. Or, an overtime pay to cover the extra work during the changeover phase. Other types of incentives included cash awards, letters of merit, and certificates of recognition.

10) Training:

Wheatley (cited by Calvert, 2006) argued that the lack of user training had been cited as the 'smoking gun' of several failed ERP implementations. On the other hand, Alballaa & Al-Mudimigh (2011) suggested that training should be readily and broadly available to encourage ERP acceptance and use. It was important to consider both practical and conceptual skills when delivering ERP training. Training can also be used as a tool to help employees overcome some resistance to change.

11) Post-Implementation Change-Management

Alballaa & Al-Mudimigh (2011) stated that post-implementation activities, such as mentoring by super-users, training, help-desk support, end-user documentation, newsletters about ERP advanced features and functions, online help, and so on were instrumental. Furthermore, ongoing post implementation change management activities were necessary to help maintain a competent end-user base.

Calvert's Model Discussion:

According to Calvert (2006) a key element of the model was the inclusion of the individual employee's motivation to learn and use the system as an intervening variable between the organisation's change management efforts and individual capacity to use the system. The reason for including this variable was that it provides a theoretical mechanism for explaining how and why factors such as 'executive championship' and a 'strong change-management' team affect the ultimate goal of having employees in the organisation who can and do make effective use of the ERP system. The central idea in the model was that the ten different change-management factors can all help motivate individual employees to learn and use the new ERP system; and that motivated employees will make the effort to become effective users. Clearly, other factors such as

each employee's prior knowledge of computing, capacity to learn, access to learning materials are also important determinants of individual capacity to use an ERP system effectively.

2.5 ERP Processes:

2.5.1 ERP Defined

McAdam and Galloway (2005) explained that ERP systems are and have been designed to solve the fragmentation of information particularly in large corporate organisations, and integrate all the information flows within a company. The major benefit have revolved around standardizing business processes, ensuring integrity of data, and removing the number, complexity and expense surrounding old independent legacy systems.

According to Collier and Evans (2012) ERP systems integrate all aspects of a business, accounting, customer relationship management, supply chain management, manufacturing sales, human resources – into a unified information system and provide more timely analysis and reporting of sales, customer, inventory, manufacturing, human resources, and accounting data.

ERP systems usually consist of different modules that can be implemented individually so that each department still has a level of autonomy, but they are combined into an integrated operating system.

According to a study by Aladwani (2001) the ERP system was an integrated set of programmes that provides support for core organisational activities such as manufacturing and logistics, finance and accounting, sales and marketing and human resource. An ERP system helps the different parts of an organisation share data and knowledge, reduce costs and improve management of business process.

Hedman and Kalling (cited in Shel,2009) suggested that ERP involved the integration of the data into a single system for information to be monitored and shared within the organisation which further aids the enhancement of business operations by changing business processes and provide support for organisations (Shel, 2009).

Nah et al (2001) (cited in Shel,2009) suggested that the most essential characteristics of ERP are its ability to:

- a) Automate and integrate an organisation's business processes;
- b) Share data and practices across the enterprise; and
- c) Produce and access information in a real-time milieu.

In this regard it is important to know that the term ERP entails not only the software aspects but also an effective combination of business strategies, users and the hardware that are required to run the ERP software.

2.5.2 ERP Implementation Process

According to Sumner (cited by Shel, 2009) ERP implementation comprised configuration issues, data migration from legacy system to ERP system, building interfaces, reports implementation, and pilot testing. Configuration process involved adaptation of generic functionality of the package to meet the organisation's needs. Many companies acquired services of technical consultants from the vendor or the software supplier to assist the company in implementation.

2.6 Effectiveness and Efficiency

Robbins and Judges (2011) defined effectiveness as often described as "doing the right things"—that is, those work activities that will help the organisation reach its goals, the degree to which programme or system objectives are being achieved. Daft (2003) argued it was the extent to which the goals of the system were attained or the degree to which a system can be elected to achieve a set of specific mission requirements.

In order for an ERP system to be implemented successfully all critical success factors and change management strategies should be applied efficiently and effectively.

2.7 Benefits of Enterprise Resource Planning Systems

ERP systems, if successfully implemented, can bring substantial benefits to organisations. They can provide real-time, organisation-wide information access. ERP systems have the potential to improve organisational effectiveness and productivity, enable the management to make informed decisions, and enhance the competitiveness of the organisation in the marketplace (Zeng, Lu, & Miroslaw, 2012).

According to Mishra (2011), there were five major benefits of ERP:

1. On-line/real time information throughout all the functional areas of an organisation.
2. Data standardization and accuracy across the enterprise.
3. Best-practices or optimized solutions are included in the applications.
4. Creates efficiencies that organisations would not otherwise have.
5. The analysis and reporting that can be used for long-term planning

2.8 Critical Success Factors: (CSF)

2.8.1 Critical Success Factors Defined

Rockart (cited in Shel, 2009) defined critical success factors “as those few key areas of activity in which favourable results are absolutely necessary for a particular manager to reach his or her goals”. He further suggested CSF methods aid CEO's identify their information needs regarding issues pertaining to their organisations.

According to Rockart (cited in Finney & Corbett, 2007), CSFs were those specifically distinguished areas that an organisation needed to “get right” in order for the business to successfully compete. In terms of an ERP implementation, the CSFs are those conditions that must be met in order for the implementation process to occur successfully (Finney & Corbett, 2007a).

Holland and Light (1999) (cited in Shel, 2009) defined critical success factors for ERP implementation as, “factors needed to ensure a successful ERP project”. Furthermore Esteves and Pastor (cite in Shel, 2009) viewed critical success factors in four diverse perspectives. These were, organisational, technological, tactical and strategic perspectives. The organisational perspective is related to issues like business process, culture and organisational structure whereas the technology perspective relates to certain portal package

Huang and Palvia (2001) (cited in Swaminathan,2011) proposed ten factors (at the national/environmental and organisational level) concerning ERP implementation by comparing advanced and developing countries. The national/environmental factors identified by them were economy and economic growth, infrastructure, regional environment, government regulations, and manufacturing strengths. They also noted that information technology maturity, computer culture, business size, business process re-engineering experience, and management commitment were the organisational level factors.

Similarly, Nah et al. (2001) identified 11 factors that were critical to ERP implementation success (cited in Swaminathan, 2011). These were:

1. ERP teamwork and composition;
2. Change management programme and culture;
3. Top management support;
4. Business plan and vision;
5. Business process re-engineering and minimum customization;
6. Effective communication;

7. Project management;
8. Software development, testing, and troubleshooting;
9. Monitoring and evaluation of performance;
10. Project champion; and
11. Appropriate business and information technology legacy systems.

According to Nah et al. 2001(cited by Shel, 2009), their research revealed that organisations faced different problems during ERP implementation processes and various factors critical to ERP implementation success had been identified by different authors. However, there were certain critical success factors like ERP teamwork and composition, culture, top management support, communication, project management, business process reengineering with minimum customization, troubleshooting and testing that were crucial (Nah et al 2001, p.285) (Shel, 2009).

For the purpose of this study, the researcher will concentrate on the Critical Success Factor Model proposed by Nah et al 2001. Another factor that Huang (2001) also considered as a critical success factor that would be taken into consider was computer culture because as ERP was still a new concept in developing countries, employees in organisations were still not familiar with how to use computers and business systems. Huang added the following twelfth additional CSF factor: programme12. Computer Culture

2.8.2 Factor Discussion

1. ERP Teamwork and Composition

According to Finney & Corbett (2007) ERP teamwork and composition has been repeatedly mentioned throughout the literature. That there was a critical need to put in place a solid, core implementation team that is comprised of the organisation's best and brightest individuals. Additionally, ERP implementation team should consist of representatives from all functional units of the organisation, from technical experts to senior executives, because the effort and collaboration of technical and business experts and the system's end-users are essential to the success of ERP implementation (e.g. 2000; Nah et al., 2001; 2003; Somers and Nelson, 2004). N

2. Change Management Programme and Culture

Hoffman claimed (cited in Kronbichler, Ostermann, & Staudinger, 2009) that for many companies the hardest challenge in implementing ERP was change management. According to Lawson and Price (cited by Kronbichler, Ostermann, & Staudinger, 2009) there were 3 levels of change management: a) At the most straightforward level companies act directly; b) at the next level employees may need to adjust their practices or adopt new ones; c) and at the deepest level it's a cultural change which was necessary. (Kronbichler, Ostermann, & Staudinger, 2009).

Change management was the other most widely cited critical success factor. According to Nah et al., (2001), the change management concept referred to the need for the implementation team to formally prepare a change management programme, and be conscious of the need to consider the implications of such projects (Bingi et al., 1999).

3. Top management support

According to Zhang et al. (cited in Dezdar & Ainin, 2011), top management support has two major aspects in ERP implementation projects: providing the necessary resources and providing leadership. The responsibilities of top management in ERP implementation include communicating the company strategy to all members of the organisation, developing an understanding of the restrictions and abilities, demonstrating commitment, and establishing rational objectives for the ERP implementation (Dezdar & Ainin, 2011).

Wang and Chen suggested (cited in Maditinos, Chatzoudes, & Tsairidis, 2012) that top management support was a prerequisite for the successful ERP system implementation. Top managers supervise the whole implementation procedure, enable resource distribution, and support conflict management.

4. Business Plan and Vision

According to Kronbichler et al., 2009 the business plan and vision summarised the CSFs clear goals and objectives, management expectations, anticipated benefits from ERP implementation project, business plan and vision, adequate ERP implementation strategy, motivation behind ERP implementation, multi-site issues and business case.

Ngai, Law, & Wat (2008) suggested the business plan should outline the anticipated strategic and tangible benefits, resources required, and risks and costs involved in the adoption of ERP. Holland & Light (1999) argued that a clear business vision for a project was required to give the project direction and scope. Without this, implementation was likely to be lengthy, costly and the result misaligned with the organisation's overall strategic vision.

5. Business Process Re-engineering and minimum customization

Shehab et al., (2004) stated that there were two different strategic approaches to implementing an ERP system. In the first approach, organisations had to re-engineer the business processes in order to fit the functionality of the ERP system package. The second approach is the customisation of the ERP system package to fit the existing business processes. The latter approach should be minimised.

Ngai, Law, & Wat, (2008) argued that a certain level of Business Process Engineering (BPR) should be involved for the implementation of ERP, as the packaged software may be incompatible with the needs and business processes of the organisation.

According to Rajagopal (cited in Vilpola, 2008), ERP projects push organisations to revisit their business processes and explore new ways of doing things relatively to the best practices embedded in the system. Françoise et al., (2009) proposed that throughout the BPR, business processes must be reviewed, using appropriate tools. The more in-depth this review was, the better the outcome of the BPR would be.

6. Effective communication

Nah et al. (cited by Dezdar & Ainin, 2011) argued that it is important that employees are informed about the scope, objectives, activities and updates in advance to make ERP implementation more efficient. According to Mendel (1999) the whole organisation should be aware of the project scope, its objectives and activities as an effective communication plan will have a direct impact on the success of the change management programme. Wang and Chen (Maditinos et al., 2012) put forward that insufficient communication of users' needs, goals and aspirations to the consultants may undermine the implementation of the ERP system.

7. Project management

“There is no question that effective project management must start with the definition of the requirements for the project leader position. His or her first task must then be to define the perimeter of the project, and to monitor it attentively as the project advances. Risk management plays an essential role, which may or may not be reflected in an in-depth study, depending on the corporate culture.” (Françoise et al., 2009)

According to Bhatti (cited in Kronbichler et al., 2009) Project Management coordinated the use of skills and knowledge. Furthermore it monitored the progress and the achievement of objectives of any ERP project.

8. Software development, testing, and troubleshooting

According to Esteves and Pastor (cited in Kronbichler et al., 2009) in order to enjoy the full benefits of implementation, various ERP software or packages were required to integrate the ERP system into the organisation. However, the integration of the software was not an easy task, and should be managed properly. Software may need to be developed to integrate the legacy systems and the ERP systems. Testing and troubleshooting of the ERP system was necessary to ensure that the software functions according to plan. Troubleshooting for errors was particularly critical. Organisations that implement ERP should work closely with consultants to resolve problems (Ngai et al., 2008).

9. Monitoring and evaluation of performance

Kronbichler et al.,(2009) suggested knowing what factors are influencing ERP projects made it easier to initiate control over the project progress and a continuous monitoring of factors which are influencing the success in a negative or positive way.

According to Françoise et al., (2009) in order to be able to pilot the project, one had to put indicators in place that would allow for adequate visibility. In that sense, it was essential to define a monitoring plan from the outset. Each objective must be reflected in one or more indicators that are updated regularly and are associated with an adequate correction of disparities. Such an approach must be supported by the use of monitoring tools that everyone can use. These processes will facilitate communication with management and allow true transparency. Further to this study, the actions to be performed in relation to the performance monitoring and assessment factor are:

- Be transparent with top management.
- Define a monitoring plan at the start of the project, specifying the monitoring methodology, reports, modifications and validation, among other things.
- Establish performance review and gap correction processes.
- For each objective, define an indicator that will make it possible to measure progress.
- Put in place tools and quick updating practices for the register of tasks to be performed.
- Favour project monitoring tools that all participants can understand (Françoise et al., 2009).

10. Project Champion;

The champion plays a key role in the project. Ideally there should be only one champion, who may be accompanied by one or more other sponsors in very large jobsites. This person must obligatorily be a member of top management, which will allow him or her

to give the project appropriate support. The project champion factor is based on the following actions:

- Involve the champion(s) in conflict resolution
- Appoint a champion(s).
- Ensure that the champion(s) is a (are) member(s) of top management.
- Ensure that the champion(s) is available.
- Formally define the champion's (or champions') level of authority. Involve the champion(s) in every stage of the project.
- Train the champion(s) beforehand on the impacts and objectives of the implementation.
- Ensure that the champion(s) will promote the project throughout the organisation (Françoise et al., 2009).

11. Appropriate business and Information Technology legacy systems

According to Adolph (cited in Holland & Light, 1999) legacy systems were the business and IT systems that encapsulated the existing business processes, organisation structure, culture and information technology. It determined the amount of IT and organisational change that was required to successfully implement an ERP system. "Business and IT legacy are not separate problems since many components of a business (e.g. work flow and processes) are bound up in the design and operation of the existing IT systems"(Holland & Light, 1999).

Yusuf et al (Kronbichler et al., 2009) put forward the view that the majority of difficulties experienced during ERP implementations were the costly developments of additional software as an interface to the legacy systems for master data as well as for transaction data.

12. Computer Culture/developing countries

Computer culture, according to Huang (2001) referred to the company's history of computing, employees' attitudes towards computers, and organisational dependence on computers. A company with a strong culture would have better understanding of application functionality, data management, and more accepting of ERP systems.

2.9 Conceptual Framework

The motivation behind the devised model/framework draws upon the change management models, the change management strategy model and the critical success factors as presented by Nah et al. (2001). It thereby attempts to make the most of the different approaches within the ERP systems domain. Drawing from the above rationale the conceptual framework was formulated based on the following.

- 1) An open system approach based on the four organisational subsystems according to Miller (cited in Burns, 2009). The open system approach states that if a change is effected onto one system then the impact on all other systems should also be considered.
- 2) The change management strategies according to the Calvert Model, describes that the strategies would enable the users to be motivated to learn the new system. This would then lead to a more effective use of the system.

According to Calvert (2006) a key element of the model is the inclusion of the individual employee's motivation as a variable to learn and use the system. This is an intervening variable between the organisation's change management efforts and individual capacity to use the system. The reason for including this variable is that it provides a theoretical mechanism for explaining how and why factors such as 'executive championship' and a 'strong change-management' team affect the ultimate goal of having employees in the organisation who can and do make effective use of the ERP system.

- 3) Identify in the literature the Critical Success Factors that facilitates the ERP implementation according to Nah et al.
- 4) Lewin's Three Step Model, looking at pre-implementation, implementation and post implementation and which change management strategies and CSF is important at each stage that will facilitate the ERP project.

Figure below illustrates the suggested change management model that would be used to cover the main research question, "What was the change management approach undertaken to implement ERP at GIPF, and how can the application of change management strategies enable a more effective ERP implementation?"

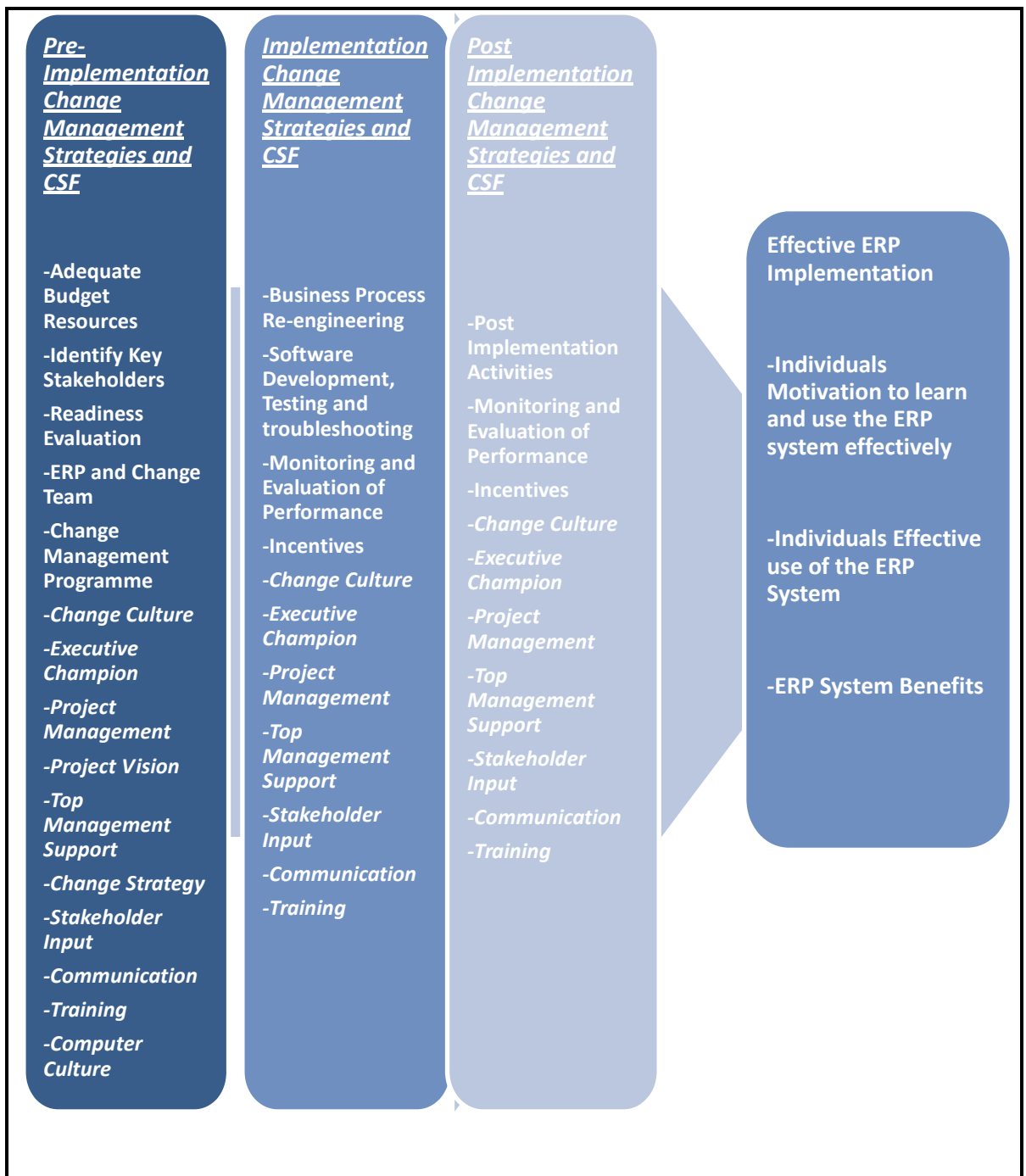


Figure 2.4 Adapted Model from Lewin's (cited in Burnes, 2009) and Calvert (2006), as well as Nah et al.,(2001).

2.10 Summary

This chapter undertook a detailed review of the available literature on the concepts of change management, change management strategies, ERP processes and critical success factors in ERP.

The literature reviewed demonstrated that organisations are composed of interconnected sub-systems and that they are all connected with each other and making a change to one subsystem will impact all other subsystems within the organisation. This means when implementing an ERP solution, it is not only a change to the technical subsystem but one should also focus on the non-technical aspects of the implementation. As indicated by Haines (2010) which he referred to the project stool which represents the critical components of an implementation, People, Process and Technology need to be managed correctly so that the full benefits of the ERP can be unleashed.

The review also highlighted that change management strategies and critical success factors are directly linked to each other. Change Management is a particularly important factor that influences the expected outcome of the ERP implementation. Change Management was clearly stated as a critical success factor. When change management strategies were applied during the ERP implementation the organisational critical success factors are then automatically taken into consideration such as Vision, Communication, Project Champion and top management support.

The next chapter is concerned with the research methodology. It will outline the research design, the methods for data collection, the study population, fieldwork undertaken and the interpretation of data and techniques utilised to ensure data reliability.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter expands on the selected research design and methods used in the study. It provides details on the research design and methodology being used. It concerns the research questions, the research process and the methods used in collecting and analysing data. The quality and rigour of the intended research design, and the ethics regarding the research, are assessed.

3.2 Research Design

The research design is the overall plan of how the researcher intends to implement the project in practice. Parahoo (cited in Draper, 2004) defined research design as “a plan that describes how, when and where data are to be collected and analysed”.

Hammersley argued (cited in Maxwell, 2008) that in a qualitative study, “research design should be a reflexive process operating through every stage of a project”. The activities of collecting and analysing data, developing and modifying theory, elaborating or refocusing the research questions, and identifying and dealing with validity threats are usually going on more or less simultaneously, each influencing all of the others. In addition, the researcher may need to reconsider or modify any design decision during the study in response to new developments or to changes in some other aspect of the design (Maxwell, 2008).

D. Coldwell and F Herbst (2004) asserted that research design is a time-based plan activity focused on research questions. There are various types of research design such as descriptive, exploratory and experimental. This study shall utilise exploratory research design to explain the impact of various intervening variables in the implementation of ERP processes at GIPF.

3.2.1 Research Strategy or Approach

Bryman and Bell (2007) defined research strategy as a general orientation to conduct business research. There are two distinct research strategies, i.e. quantitative and qualitative. Thus, quantitative research can be construed as a research strategy that emphasizes quantification in the collection and analysis of data. Quantitative approach placed an emphasis on collection of numerical data, it drew influences from those data and resolves problems using numbers. By contrast, qualitative research can be construed as a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data (Bryman and Bell, 2007). This study shall use the qualitative research approach in order to probe the feelings, opinions, attitudes on various aspects of implementation of the ERP process at GIPF.

3.2.2 Basic Characteristics of Qualitative Research

Qualitative research methods were developed in the social sciences to enable researchers to study social and cultural phenomena. Myers (1997) advance the view that qualitative research involves the use of qualitative data, such as interviews, documents, and participant observation data, to understand and explain social phenomena. Qualitative researchers can be found in many disciplines and fields, using a variety of approaches, methods and techniques. In Information Systems, there has been a general shift in IS research away from technological to managerial and organisational issues, hence an increasing interest in the application of qualitative research methods.

There are five major types of qualitative research: phenomenology, ethnography, case study research, grounded theory, and historical research. All of the approaches are similar in that they are qualitative approaches. Each approach, however, has some distinct characteristics and tends to have its own roots and following (Hagan, 2003):

- 1) Phenomenology – a form of qualitative research in which the researcher attempts to understand how one or more individuals experience a phenomenon.
- 2) Ethnography – is the form of qualitative research that focuses on describing the culture of a group of people. Note that a culture is the shared attitudes, values, norms, practices, language, and material things of a group of people.
- 3) Grounded theory – is a qualitative approach to generating and developing a theory from data that the researcher collects
- 4) Historical research – research about events that occurred in the past. An example, you might study the use of corporeal punishment in schools in the 19th century.

5) Case study research – is a form of qualitative research that is focused on providing a detailed account of one or more cases. Case study research is the most common qualitative method used in information systems. Clearly, the case study research method is particularly well-suited to IS research, since the object of our discipline is the study of information systems in organisations, and "interest has shifted to organisational rather than technical issues" (Benbasat et al. 1987).

This study is designed as a case study on GIPF using a qualitative approach for data collection.

3.3 Methodology

3.3.1 Research Questions

According to Boeije (2009) the research question is the central question which the researcher wants to answer by doing a research project. The research problem must be sufficiently focused and defined in order to formulate clear research questions.

The overall purpose of the research is therefore to find an answer to the research question. An appropriate and well-executed research design ensures that this is done in the most rigorous way possible (Draper, 2004).

The research will be conducted based on finding responses to the main question around the change management approach to the ERP implementation done at GIPF, and how the application of change management strategies enable a more effective ERP Implementation?

There are also related three sub-questions, which are:

1. What is Change Management theory and how is it applied to ERP implementations?
2. What are the most important critical success factors that will facilitate the result of the ERP Implementation?
3. What are the most important mechanisms of effective change management in the implementation of ERP Systems?

3.3.2 Research Objectives

This study is designed to achieve the outcomes of the objectives set out below:

- a) To make a critical assessment of GIPF management approaches undertaken to implement ERP in 2009.
- b) To identify change management theories and models that would help explain ERP implementation.
- c) To uncover critical success factors that facilitates the implementation of the ERP system
- d) To trace important mechanisms leading towards how ERP systems can be implemented effectively.

Yin categorised case studies as explanatory, exploratory, or descriptive. He also differentiates between single, holistic case studies and multiple-case studies (Yin cited in Baxter & Jack, 2008). This particular study shall use GIPF as a single exploratory case study for our purposes.

3.3.3 Data: Population and Sample

The target population for this study is the decision-makers at GIPF, who participated in determining ERP implementation.

3.3.3.1 Defining the Population:

Sampling begins with precisely defining the target population. The target population must be defined in terms of elements, geographical boundaries, and time (Sekaran and Bougie, 2009).

The primary objective is to assess the change management approach to the ERP implementation at GIPF in 2009. Therefore the target population is all members that are currently still employed at GIPF, who were part of the original implementation team to implement ERP process.

3.3.3.2 Sample Design:

When sampling strategies for social research are described, a key distinction is made between probability and non-probability samples. Probability sampling is generally held to be the most rigorous approach to sampling for statistical research, but is largely inappropriate for qualitative research.

Qualitative research uses non-probability samples for selecting the population for study. In a non-probability sample, units are deliberately selected to reflect particular features of or groups within the sampled population. The sample is not intended to be statistically representative: the chances of selection for each element are unknown but, instead, the characteristics of the population are used as the basis of selection. It is this feature that makes them well suited to small-scale, in-depth studies, as we will go on to show. The main sampling approaches that have been developed for qualitative enquiry are summarised below (Ritchie & Lewis, 2003).

Sampling is the process of selecting a sufficient number of the right elements from the population, so that a study of the sample and an understanding of its properties or characteristics make it possible for us to generalize such properties to the population elements (Sekaran and Bougie, 2009). This study shall use purposive sampling for the purpose of collecting data from selected GIPF managers that were directly involved in the implementation team of ERP.

3.3.3.4 Purposive Sampling:

Sekaran and Bougie (2009) argued that instead of obtaining information from those who are most readily or conveniently available, it might sometimes be necessary to obtain information from specific target groups. The sampling here is confined to specific types of people who can provide the desired information, either because they are the only ones who have it, or conform to some criteria set by the researcher.

3.3.3.5 Judgemental Sampling:

Judgemental sampling involved the choice of subjects who are most advantageously placed or in the best position to provide the information required. Thus, the judgement sampling design is used when a limited number or category of people have information that is sought.

Judgemental sampling may curtail the generalisability of the findings, due to the fact that we are using a sample of experts who are conveniently available to us (Sekaran and Bougie, 2009). This shall generally be the nature of the case study on GIPF, in that the researcher shall use own judgment to include the sample participants based on team membership in the ERP implementation.

3.3.3.6 Sample Size

Based on the team composition for the ERP implementation, the sample would be as follows:

GIPF

1. Executive Sponsor/ Owner
2. Project Team Leader: HR
3. Project Manager
4. Functional Core Team member
5. IT Technician/Engineer

SILNAM

6. Project Manager
7. Project Leader
8. Business Analyst / Solution Architect
9. Functional Consultant
10. Technical Consultant

The total number of participants to be interviewed will be 10.

3.4 Research Instruments

M. Saunders, Lewis. P, and Thornhill. A, (2007) asserted that questionnaires are used in quantitative studies for descriptive or explanatory research. Since this qualitative case study is of an exploratory nature, it shall use an Interview Guide as a data collection measuring instrument. The research instrument is attached in the appendix, and is designed in response to the main research question and three sub-questions.

The research instrument in the form of an Interview Guide is divided in four sections, covering 27 questions for data collection. It is structured as follows:

Section A: introduces the main question and three sub-questions followed by two questions on the general ERP system background; It also deals with ethical issues.

Section B: raises seven questions on change management theory and ERP implementations;

Section C: deals with seven questions on most important critical success factors in facilitation of ERP;

Section D: covers seven questions on mechanisms of effective change management in the implementation of ERP systems.

Provision is made in the introduction of the Interview Guide as a reminder to the researcher to pay due consideration to ethical issues. The interviewee is assured of privacy and confidentiality of the information to be shared, and that he or she shall remain anonymous.

3.5 Data Collection Method

Qualitative approaches to data collection usually involve direct interaction with individuals on a one to one basis or in a group setting. Data collection methods are time consuming and consequently data is collected from smaller numbers of people that would usually be the case in quantitative approaches such as the questionnaire survey. The benefits of using these approaches include richness of data and deeper insight into the phenomena under study (Hancock, 2002).

The data from qualitative studies is often derived from face-to-face interviews, focus groups or observation and tends to be time consuming to collect. (Hancock, 2002)

Typically, a case study researcher uses interviews and documentary materials first and foremost, without using participant observation (Benbasat, 1987).

Since this was a qualitative study, the research anticipated multiple methods and multiple sources of data would result in wealth of data.

For the purpose of this study, a combination of semi-structured and documentary information will be used to gather data.

Semi-structured interviews: This type of interviews has predetermined questions, but the order can be modified based upon the interviewer's perception of what seems most appropriate. Question wording can be changed and explanations given; particular questions which seems inappropriate with a particular interviewee can be omitted, or additional ones included (Robson,2002).

Robson (2002) argued that the advantages of face-to-face interviews offer the possibility of modifying one's line of enquiry, following up interesting responses and investigating underlying motives in a way that postal and other self-administered questionnaires cannot. Non-verbal cues may give messages which help in understanding the verbal.

The research objective is to critically assess the change management approach to the ERP implementation done at GIPF in 2009. Interviews can provide an in-depth understanding, insights on people's experiences, and help to approach the research

questions from different dimensions. The researcher will make use of semi-structured interviews with members of the ERP Implementation team.

The reason for selecting semi-structured interviews is based on the following:

- a) The study focuses on the meaning of particular phenomena to the participants.
- b) Individual perceptions of processes with a social unit- work-group, department or whole organisation.
- c) Where individual historical accounts are required of how a particular phenomenon developed.

3.6 Data Analysis:

Data analysis in qualitative research is an on-going, emerging and iterative or non-linear process. To analyse literally means to take apart words, sentences and paragraphs, which is an important act in the research project in order to make sense of, interpret and theorise data (Robson, 2002). The data shall be analysed in this study by capturing emerging issues from the interviewees.

3.6.1 Content Analysis

Content analysis shall also be used as a tool to categorise the data collected from the interviewees. The basic idea being to identify from the transcripts the extracts of data that are informative in response to the interview questions asked and develop the study.

The process of content analysis involves continually revisiting the data and reviewing the categorisation of data until the researcher shall be sure that the themes and categories used to summarise and describe the findings are truthful and accurate reflection of the data (Hancock, 2002).

3.7 Limitations and Demonstration of the quality and rigour of the research design

It is the role of the case study researcher to test and confirm his/her findings in order to indicate the findings are valid and the procedures are rigorous. Rigour is built into this process by focusing the strategies used to generate meaning from the qualitative data (Zucker, 2009).

This study was conducted using all the care and rigour required to generate useful data from the sample of GIPF population. The researcher tried the utmost to capture data in an authentic manner. The researcher has ensured that enough detail is provided so that readers can assess the validity or credibility of the work. As a basic foundation to achieve this, we have ensured that:

- a) the case study research question is clearly written, propositions (if appropriate to the case study type) are provided, and the questions substantiated;
- b) case study design is appropriate for the research question;
- c) purposeful sampling strategies appropriate for case study have been applied;
- d) data was collected and managed systematically; and
- e) the data has been analysed correctly following guidelines of Russell, Gregory, Ploeg, DiCenso, & Guyatt, 2005.

In this study, the researcher gained the trust of the participants and guaranteed them that the information obtained during the interviews would be kept confidential and that their anonymity would be maintained.

3.8 Ethical Considerations

Ethical issues are present in any kind of research. The research process creates tension between the aims of research to make generalizations for the good of others, and the rights of participants to maintain privacy. Ethics pertains to doing good and avoiding harm. Harm can be prevented or reduced through the application of appropriate ethical principles. Thus, the protection of human subjects or participants in any research study is imperative (Orb, Eisenhauer, & Wynaden, 2001).

3.8.1 Principles Associated with Ethical Conduct:

Do No Harm: It is best to safeguard against doing anything that will harm the participants in the study. If one begins a study and found that some participants seem to have adverse reactions, it is best to discontinue the study, even if it meant foregoing the research plan.

Privacy and Anonymity: Any individual participating in a research study has a reasonable expectation that privacy will be guaranteed. Consequently, no identifying information about the individual should be revealed in written or other communication.

Confidentiality: Any individual participating in a research study has a reasonable expectation that information provided to the researcher will be treated in a confidential manner. Consequently, the participant is entitled to expect that such information will not be given to anyone else.

Informed Consent: Individuals participating in a research study have a reasonable expectation that they will be informed of the nature of the study and may choose whether or not to participate.

Rapport and Friendship: Researchers should make sure that they provide an environment that is trustworthy. At the same time, they need to be sensitive to the power that they hold over participants. Researchers need to avoid setting up a situation in which participants think they are friends with the researcher.

Intrusiveness: Individuals participating in a research study have a reasonable expectation that the conduct of the researcher will not be excessively intrusive. Intrusiveness can mean intruding on their time, intruding on their space, and intruding on their personal lives.

Inappropriate Behaviour: Individuals participating in a research study have a reasonable expectation that the researcher will not engage in conduct of a personal or

sexual nature. The researcher should know that they are bound by your code of conduct to treat those you study with respect.

Data Interpretation: A researcher is expected to analyze data in a manner that avoids misstatements, misinterpretations, or fraudulent analysis.

Data Ownership and Rewards: In general, the researcher owns the work generated.(Richards, 2002)

3.9 Summary

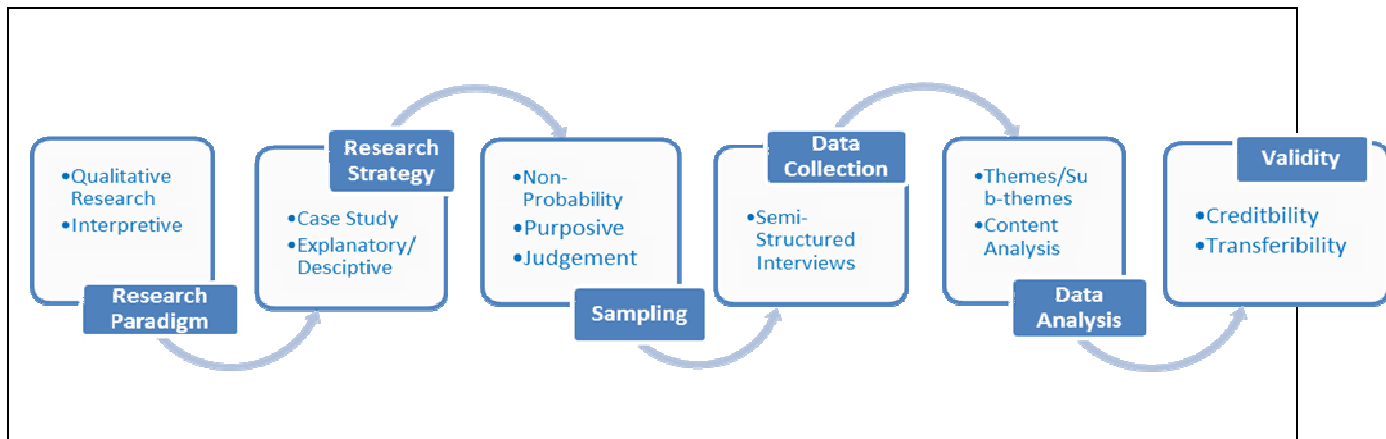


Fig 3.4 Proposed Research Process Flow

Source: B.L. Sitler 2013, own diagram.

This research methodology chapter focused on the methods and processes which were undertaken in order to carry out the research. Semi-structured, in-depth interviews were conducted with the members of the ERP Implementation team identified in the sampling process. The data was recorded using a tape recorder and then transcribed into Microsoft Word document.

The next chapter, Chapter 4, will report on and discuss the results and findings of the data analysis.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION

4.1 Introduction

Data analysis is a systematic search for meaning. It is a way to process qualitative data so that what has been learned can be communicated to others. Analysis means organizing and interrogating data in ways that allow researchers to see patterns, identify themes, discover relationships, develop explanations, make interpretations, mount critiques, or generate theories. It often involves synthesis, evaluation, interpretation, categorization, hypothesizing, comparison, and pattern finding. It always involves what H. F. Wolcott calls “mindwork”. . . Researchers always engage their own intellectual capacities to make sense of qualitative data” (Hatch 2002, 148).

The results obtained from the semi-structured interviews with members of the ERP Implementation team are presented in this chapter. The data are organised into the final themes which emerged from the data as presented here. Direct voices in the form of quotes from the interviews or documents are used where appropriate.

As we proceed, all results shall be analysed using the logical order of the questions posed in the study. The structure of the Interview Guide shall be used to develop the body of the discussion. Each of the results shall then be summarised followed through in a logical order grouping the responses from the Interviewees as they co-incide around a specific thematic question in order to conclude the findings.

4.1.1 The data gathered by the research was based on the following main research question, supplemented by three sub-questions:

Main Research Question:

What was the change management approach to the ERP implementation done at GIPF, and how can the application of change management strategies enable a more effective ERP Implementation?

Sub Questions:

- 1) What is Change Management theory and how is it applied to ERP implementations?

- 2) What are the most important critical success factors that will facilitate the result of the ERP implementation?
- 3) What are the most important mechanisms of effective change management in the implementation of ERP Systems?

4.2 Description of the Sample

This section provides the sampling frame in the form of a charter that was used to determine the study sample. A charter was drawn outlining the project organisation. It set out the Project Team with functions and duties between the client and the consultant. The research shall use the charter as the sample frame out of which criteria shall be drawn for inclusion in the sample for team members.

There were certain exclusions from the sample population. These were GIPF Board of Directors, some EXCO members, supportive staff of the weekly implementation committee or the project steering committee, such as secretaries, clerks, data typists and technicians used for hardware or system maintenance.

In 2009 GIPF management established a team to implement the new Oracle E-Business suite. Five members were identified from the GIPF and five from the external consultants to serve as a team. The research has drawn on a record that was kept by the Information Systems department to develop the sample for this study. There were originally 20 members in the team, but eight resigned in the meantime. The total staff component at GIPF is 170, including regional staff. The management staff made out about 15 members and the sample drawn was 10, half of whom were drawn from consulting company, specifically because they suit the requirements of this particular study.

The researcher has set the following criteria, characteristics for inclusion in the sample:

- a) familiarity with the computer system needs;
 - b) 5 years' experience with implementation of the GIPF Strategic Plan;
 - c) direct involvement in the implementation committees of the new system;
 - d) involvement in decision-making related to change management; and
 - e) monitoring critical factors of ERP implementation.
- Purposive Sampling:**

Sekaran and Bougie (2009) argued that instead of obtaining information from those who are most readily or conveniently available, it might sometimes be necessary to obtain information from specific target groups. The sampling here is confined to specific types of people who can provide the desired information, either because they are the only ones who have it, or conform to some criteria set by the researcher. The researcher has outlined the criteria as derived from the functions set out below.

Table 4.1 Core Team Member functions and duties

Research Participant (RP) 1	Role and Responsibilities: Superuser FA,GL,AP
RP1	The functional team from the GIPF will be 'expert' in the fields of Financial and Human Resource Management in GIPF. The Team will also comprise members from departments running systems to which the IFMIS/HRMIS will need to interface with. The team will be responsible to define the detailed requirements of the IFMIS/HRMIS system and participate throughout the whole project implementations. The team will be responsible to sign off the acceptance of the system.
Participant 2	Role and Responsibilities: Developer Finance and HR
RP2	<p>The developer functions were as follows</p> <ul style="list-style-type: none"> • To develop the technical design based on functional requirements document through interaction with functional consultants • To develop codes and custom components • To develop unit test cases • Performs unit testing and System Testing • Perform Data Conversion and Migration • Develop required interface between the IFMIS-HRMIS and other applications running at the GIPF.

Participant 3	Role and Responsibilities: Super-ser Purchasing
RP3	<p>The functional team from the GIPF will be ‘expert’ in the fields of Financial and Human Resource Management in GIPF. The Team will also comprise members from departments running systems to which the IFMIS/HRMIS will need to interface with. The team will be responsible to define the detailed requirements of the IFMIS/HRMIS system and participate throughout the whole project implementations. The team will be responsible to sign off the acceptance of the system.</p>

Participant 4	Role and Responsibilities: Project Sponsor
RP4	<p>This person has the ultimate responsibility to ensure that the delivered product is what the business requires, and is within the agreed time frame and costs. Responsibilities are therefore to:</p> <ul style="list-style-type: none"> • Take full ownership of the project on behalf of GIPF and communicate progress and exceptions to the Steering Committee for information and approval • Provide the terms of reference for the project • Agree the overall critical success factors for the successful completion of the project • Sit in the IFMIS/HRMIS Steering Committee • Approve overall system functionality and ensure that the business needs are met • Ensure that the stated benefits are realized • Perform the Change Manager role at departmental level. • Take full ownership of the project on behalf of GIPF and communicate progress and exceptions to the Steering Committee for information and approval • Provide the terms of reference for the project • Agree on the overall critical success factors for the successful completion of the project

Participant 5	Role and Responsibilities: Software Developer SILNAM
RP5	<p>The responsibilities of the Technical Consultants are as follows:</p> <ul style="list-style-type: none"> • Develops technical design based on functional requirements document through interaction with functional consultants • Develops codes and custom components • Develops unit test cases • Performs unit testing and System Testing • Performs Data Conversion and Migration • Develop required interface between the IFMIS- HRMIS and other applications running at the GIPF.

Participant 6	Role and Responsibilities: Finance Application Consultant SILNAM
RP6	<p>The responsibilities of SILNAM Functional Consultant will include the following:</p> <ul style="list-style-type: none"> • Evaluating the business requirements and recommending how each can be incorporated in Oracle Applications • Reviewing business processes and recommending modifications or enhancements that enable the client to derive maximum benefits from the products • Assisting with the specification of representative data sets and business scenarios for acceptance testing • Helping GIPF 's project team members to gain the appropriate applications skills. • Identifying any external requirements and defining

Participant 6	Role and Responsibilities: Finance Application Consultant SILNAM
	<p>phased data load and validation procedures</p> <ul style="list-style-type: none"> • Setting up of Oracle Applications modules • Providing production support for the time specified in the estimates • Project implementation deliverable preparation

Participant 7	Role and Responsibilities: Project Lead HR SILNAM
RP7	<p>The SILNAM Project Lead shall assist the SILNAM Project Manager and the GIPF Project Manager with the implementation of the project within the scope of work described in this charter. The SILNAM Project lead shall be responsible to:</p> <ul style="list-style-type: none"> • Plan and coordinates and monitor the activities of project team ensuring that all the work is undertaken in accordance with the agreed plan • Participates in project review meetings • Reviews deliverables during various Stages of implementation • Determines the staffing needs of the project • Update the project manager of risks/issues/progress

Participant 8	Role and Responsibilities: HR, Leave Management Super-ser
RP8	<p>The functional team from the GIPF will be 'expert' in the fields of Financial and Human Resource Management in GIPF. The Team will also comprise members from departments running systems to which the IFMIS/HRMIS will need to interface with. The team will be responsible to define the detailed requirements of the IFMIS/HRMIS system and participate throughout the whole project implementations. The team will be responsible to sign off the acceptance of the system</p>

Participant 9	Role and Responsibilities: Project Manager SILNAM
RP9	<p>The SILNAM Project Manager shall assume the following responsibilities:</p> <ul style="list-style-type: none">• Overall responsibility for the overall project execution as per mutually agreed plan• Develops detailed Project Plan in consultation with GIPF Project Manager and SILNAM Project Leaders• Monitors progress against the plan and performs status reporting to all relevant parties• Ensures that the staffing needs for the project are met.• Assures quality project process and deliverables• Is responsible for scope control• Assesses and monitors risks throughout the project

4.3 Themes

Three main themes were identified from the literature and formed the main results derived from sections of the data collection instrument (Interview Guide). However, the discussion of the results shall follow in response to the main research question and the three sub-questions of the study. The analysis does not necessarily follow a strict sequence of the 27 questions of the research instrument as such.

The themes and the accompanying sub-themes are depicted in Figure 4.1.



Fig 4.1 Themes and Sub-Themes (Source: B.L. Sitler 2013, own diagram)

4.4 Interpretation and Analysis of Themes:

The next section will discuss the data according to each of the main themes and sub-themes.

4.4.1 The Change Process

Data Summary Sub Question 1

What is Change Management theory and how is it applied to ERP implementations?



Fig 4.2. Change Process (Source: B.L. Sitler, own diagram)

4.4.1.1 Understanding the need for Change.

The segment “Understanding the Need for Change” is in response to Question 1 and 2 in Section B of the interview guide

"The main reason is just to at least bring the fund at a level where you operate on a system instead of focusing on a manual arrangement because the fund is big and growing and so you'll not afford to have a lot of manual processing"

....."As a result with the introduction of this new system it does really push us to a situation where we can confidently say we are presenting our financials correct data and it's not manipulated by manual interventions" (RP1)

"We had an existing system account mate, but it had a lot of shortcomings and there was no HR system at all, so all the HR stuff was done manually....so the main reason was to address all the problems associated with the current system and then to add the HR system" (RP2)

"I think this was part of our five year plan, the strategic plan and the strategic plan was communicated to everybody so I believe the organisation was informed we were going to replace our system, so everybody knew, it was part of the strategic plan,. (RP4)

"The main reason that I can think about was the combination required among the financials, the Human Resources, the GIMIS system to be integrated into the financials" (RP6)

"What we previously used to do is everything was done manually and we needed to move away from manual to automation process in order to make our lives easier" (RP8)

"Improvement in efficiency of Financial and Human Resource Management", "an Integrated Solution that ease the exchange", "better control as per policies", "improved and on-time reporting as a basis for decision making" (RP9)

Summary of Key Findings on Understanding the Need for Change

- That all transactions would be captured on the new system and that no manual work would be required. **(RP1, RP2 , RP8)**
- Due to the automation of all business processes all the financials will be more accurate and correct and that the data will not be manipulated by manual interventions. **(RP1,RP2)**
- Another fact that was highlighted by the participants was that there were a lot of problems experienced by the current financial system and that there was no Human Resource system to support the business activities. To bring efficiency to the HR and Finance System **(RP2, RP9)**
- That the current system was not integrated **(RP2, RP6,RP9)**
- That the new system was part of the management five year strategic plan **(RP4)**

4.4.1.2 Assessing the Impact on Organisation (Subsystems)

The segment "Assessing the Impact on Organisation and Subsystems" is in response to Question 3 and 4 in Section B of the interview guide.

"Strategic goals which we would've wanted to preserve obviously would be that your strategy in terms of contributions, update have to be preserved to ensure that it falls within the requirement of the rules of the fund" , "then in terms of your general accounting practice", "it have to account according to the policies and procedures which we happen to have in place", " We introduced the FA system", have to confirm to the reducing balance method" (RP1).

"Basically was one of the culture changes which is to push people to the mindset of doing things for a one month, instead of waiting for things up to the financial year, now it's changed to do it on a monthly basis" (RP1).

"Basically the chain for approval of purchase orders" (RP3)

"Their organisational strategy in terms of values and their structure", " even if there'll be changes at least they needed to be protected so that they can still cater for the core functions and for their company objectives", " their culture what I have observed during the implementation is that they are not really together"(RP6).

"First of all their structure, the organisational structure, because the implementation was not just, basically there was also an HR side", "also their reporting structure"..... , "Also the culture in the organisation", "It's one of the projects that really had a positive culture towards the implementation towards change", "you could really see that was something that they were working hard at it knowing it would bring change within the organisation and also solve their problems" (RP7).

"Operational Goals (Serving Pensioners and Stakeholders)", " Values (Accountability, Transparency with Audit Trails)",..... " Control (Approval Hierarchies, Responsibility Profiling, User Access)" (RP9).

Summary of Key Findings: Assessing the Impact on Organisation and Subsystems

- That they wanted to preserve strategy of contributions, to make sure that it is in line with the rules of the fund **(RP1)**.
- The chain of approval of purchase orders and approval hierarchies, organisational Structure, the reporting structure **(RP3, RP7)**.
- That the system should cater for all core functions and company objectives **(RP6)**.
- The operational goals of the organisation serving the pensioners and the and abide to the values of accountability and transparency **(RP9)**.

4.4.1.3 Assessing Organisational Readiness ,Organisation buy-in to the need for change

The segment “Assessing Organisational Readiness and Buy-In to the Need for Change” is in response to Question 5 in Section B of the interview guide.

"Some were still a little bit how to you call it, a bit reluctant to move towards the new system/change , but some were taking it as a good thing to do and then they moved very, very fast". (RP1)

"There was a change management portion included and in all meetings they were always discussed what risks are there, and then the human factor would always come up at the risk, so I think although we did not do a readiness assessment, we always kept that in mind, because it is so critical, it's no use putting in a new system and the people are not willing to use it". (RP2)

"We involved them up to a certain point and told them this is what we intend to do, and that at a very introductory stage", "So to a certain degree we did not involve them throughout, that's basically what we neglected to do. We should have rather involved them maybe to do, especially at the requisition level, where they are actually the process owners"; "We just instead, involved them at the introductory stage but from there onwards, we left them out and we decided for them, and when the system came, it was that negativity of it.....". (RP3)

"The need was identified by the board, due to audit reports, various audit reports that came in. There was a lack of control in the financial system and there were no system for HR. So the need for change was realised at the top level, then it came down to the IT department and said find something to resolve all these issues. Every board meeting there was system issues; they were looking for something to resolve these issues." (RP4)

"We appointed two project leaders, one for HR and one was for Finance and we sat with these gentlemen and we informed them that they need to make sure that they have the right people in place, the functions, that's why the functions moved from X to Y to make sure the job can be done." (RP4)

"What we expected from the project leaders is to make sure their team is ready". (RP4)

"From my perspective, ok the management, they were for the change, so they were the ones driving the change for the need to use the ERP, and then for the employees, they were initially, I won't say reluctant, but they were not willing to go with the process of ERP, they were more like expecting the ERP to be like once it's finished, they just wanted to start using it" .(RP5)

"In terms of readiness, there were now different types of users, there were some users that were ready and then there were some that were not really, really ready and then those users that were not really ready were the ones that had problems later with the system or then with the changes in the business processes, but then those ones that were ready, were again fine to deal with.", "that the management had a good support for the employees, so I think this also helped employees to buy in on the change" .(RP6)

"So my observation is the attitude they had, and their understanding of what was required, it was very high, they had a good understanding. You could see that they are very ready, because participation was very high". (RP7)

Summary of Key Findings on: Assessing Organisational Readiness and Buy-In to the Need for Change

- Some resource persons were reluctant to change, but eventually saw the need for change. **(RP1, RP5, RP6)**
- That the need for a new system was identified by the board, and the need for change was realized at top level and directed the IT department to find a solution to resolve all issues. **(RP4)**
- No readiness assessment was done but the human factor would always be a risk and discussed in meetings. **(RP2)**
- The project leaders that was appointed as project leaders (Finance and HR) had the responsibility to make sure that they had the right people (resources) in place and that they had their teams ready. **(RP4)**

4.4.1.4 All Stakeholders involved throughout the Change Process:

The segment "All stakeholders involved throughout the Change Process" is in response to Question 6 in Section B of the interview guide

"Yes, given the fact that the stages were done in such a way that each and every user have to be trained and then need to know what need to happen in the processes". (RP1)

"What we basically did is the end users; a lot of them were involved with the information gathering meetings, because you will need to get information from them because they will be using it". (RP2)

"Well I was informed, because I was part of the weekly meetings and yes, I was always fully aware, where we are, what's going to happen and all the shortcomings. I regularly informed the CEO and the board. I think the implementation team was aware, because

they were always, all were invited to the meetings we had on Friday.", "the rest of the organisation,..., he used his spectrum to inform the organisation where we are and what's happening, so I believe yes". (RP4)

"the strategic plan was communicated to everybody so I believe the organisation was informed that we were going to replace our system, so everybody knew. It was part of the strategic plan, from top management to everybody". (RP4)

"From my perspective it was on a need to know basis. The people that needed to know what, were given the information, so the employees got what they got", "Yes I think, there were regular meetings and the relevant people were informed". (RP5)

"Yes, they were involved, they were very much involved in the case that each process or each functions needs to be approved and signed off and tested by the person who is actually affected by this change". (RP6)

"HR was involved, Finance was involved, Management was involved so was the third party, the people from SILNAM that was responsible for the system. I think that we all worked together", " There was regular information sharing and yes, there was regular information sharing because there was a committee established, consisting of HR, consultants, HR, the project owner". (RP7)

"As Project manager, I was very much aware of the progress of the ERP implementation", " Through weekly project management meeting", "Through Monthly project steering committee meeting", " Through Project Reports". (RP8)

Summary of Key Findings on: All stakeholders involved throughout the Change Process

- Every user had to be trained and needed to know what was happening in the processes. **(RP1, RP2).**
- There were regular meetings held, the board and the CEO was regularly informed. **(RP2, RP4, RP8)**
- All team members were invited to the regular meetings that were held. **(RP2, RP4)**
- The strategic plan was communicated to the organisation and regular feedback was given to the organisation through the newsletter "Spectrum". **(RP4)**
- All stakeholders were very much involved, each process or each function had to be approved and signed off and tested by the person who is actually affected by this change. **(RP6)**
- There was regular information sharing, there was a committee established, consisting of HR, consultants, finance and the project owner. **(RP8)**

- There was weekly project management meeting, monthly project steering committee meeting and Project Reports. **(RP8)**

4.4.1.5 The Benefits of the ERP System

The segment “Benefits of the ERP system” is in response to Question 7 in Section B of the interview guide.

“The benefit is very huge, currently we are moving towards a scenario where you can have all your activities or all your fund activities regularly available in terms of your reporting. So the time of keeping files and going back to pile up, to pile up box of files and trying to get information is gone because of new technologies and new changes in terms of this its huge, the benefit is huge. It’s also kind of trying to get us to a smart way of doing things instead of sitting with pile up file when you are doing reconciliation, currently that’s not the case. You look at the system, the reports are generated, you just do some matching here and there and some of the reports you just press a button then get the things, then you forward it to whoever wants the information”. (RP1)

“I think one of the biggest benefit is it makes information more accessible to a bigger portion of the company than most people realize. Everybody thinks it’s just HR and Finance using it, but it’s not. I mean we are using the HR info on the CRM. We using some of the info on the document register, because you’ve got all the email addresses, you’ve got the structure, you’ve got it centrally, so you can just use it and that’s one of the biggest advantages.” (RP2)

The DB fund members, the client can see actually when a payment was made, previously that was very vague and they had to phone and wait for somebody to answer, so it actually makes information sharing much easier that can help the people do their work more properly.” (RP2)

“In a sense that it actually gives you a complete or the process details are very complete, just make an example. We had an issue when the CEO wanted to find out why payments were late for the Trustees’ S & T. The system is actually so detailed that it could give us information from the starting point when the requisition was raised up to the second it was approved.” (RP3)

“There was better control, the auditors liked it, they could now rely on the system. It tremendously cut the audit time, and previously they had no systems they could actually rely on. There was a cost benefit and not only now that the audits are shorter and cheaper, but also I think it’s more accurate. The payments we did and the interface from the pension system to the Finance system and the payments system, streamlined the payment process, it’s very shorter.” (RP4)

“If you have to give details or reports on the purchase orders that was raised during that period and things like that, especially with your income reports at the end of the month, purchase orders that’s open, we can just go to the system draw the report and things like that. It makes life easier so there’s a lot of good about the system at the end of the day” (RP3)

“Benefits is they got a centralized application where they can have their information, so instead of having different place where they, they work on excel and here they work on one set of system, and here they maybe work on paper, instead now everything is centralized.

Also the fact that the ERP implementation has got a lot of modules, so it's just not the ERP was implemented for HR, it was not just implemented for finance, it was not just implemented for Payroll, but it covers many areas within GIPF." (RP5)

Summary of Key Findings on: Benefits of the ERP system

- That all information will be available in terms of reporting, that all data will be stored in a central database. **(RP1, RP3, RP5)**
- That the data will be available to other systems to utilize **(RP2, RP3)**
- Information sharing is much easier and assist people to do their job more properly **(RP1, RP2, RP3)**
- That query facilities is available and that there is an audit trail on the system **(RP1, RP2, RP3, RP5)**
- There is better control on the system **(RP3)**
- The cost benefit, it makes audits much shorter and cheaper **(RP4)**

4.4.2 Critical Success Factor

This summary of section derives results from the research sub-question 2, as set out below:

What are the most important critical success factors that will facilitate the result of the ERP Implementation?

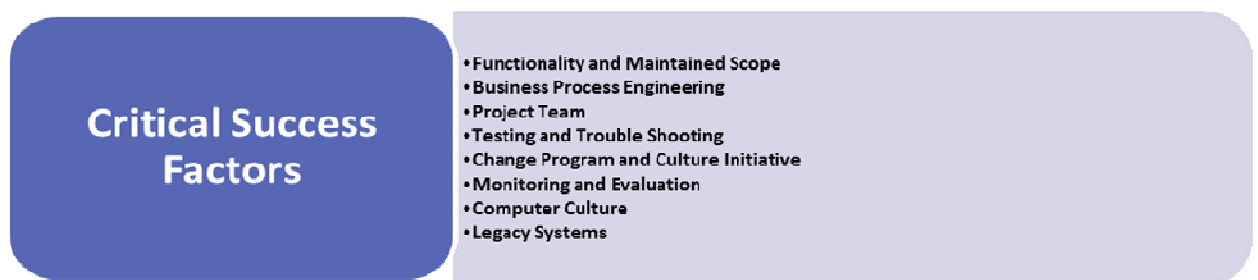


Figure 4.3 Critical Success Factors (B. L. Sitler 2013, own diagram)

4.4.2.1 Functionality and Maintained Scope, Business Process Engineering

The segment "Functionality, Maintained Scope and Business Process Re-Engineering" is in response to Question 3 in Section C of the interview guide

"The customization came around on the reporting side, because of most of the things were mainly per system functionality and when it came to reporting side that's where we suggested some few customizations or some extra reports" (RP1)

"So we made sure that whatever we have is still relevant in terms of our operations, have to be maintained so that we can have it still brought into the new ERP system and then move on just like that" (RP1)

"With the Business Suite there was a specific software development implementation methodology that they were supposed to use and we actually studied that before the tender was awarded, to make sure when we get the tenders we evaluate it. We got somebody who actually know how to do that, so there was a specific approach that we needed to be taken by the SILNAM team and then which we then followed" (RP2)

"I think we did a good job in keeping it closely to the system....., but we kept it as closely as possible, to eliminate all sorts of failures of the whole project at the end of the day" (RP2)

"There were customizations allowed, but only where really necessary, because the moment you put in customizations, you have difficulty with the next upgrade" (RP4)

"Yes we said we do not want customization because it makes future upgrades difficult and we said we choose a system that was internationally benchmarked,...we said from the beginning we'd rather adapt our processes" (RP4)

"There wasn't much customization, but there was minimal customization just to align here and there the business processes. It was just minimal to ensure that certain key functions for example in payments"... "so in fact all the customizations that were made is mostly for integrations and in terms of approvals and then the other reports" (RP6)

"The ERP Solution is an ORACLE based solution and therefore no customization was allowed on the Forms (Data Capture Screens) except through Personalization features which is more termed as configuration of the system environment to suite the user needs", "NO formal BPR was conducted"(RP9)

Summary of Key findings on Functionality, Maintained Scope and Business Process Re-Engineering.

- The ERP Solution is an ORACLE based solution and therefore no customization was allowed on the Forms (Data Capture Screens) except through Personalization features which is more termed as configuration of the system environment to suite the user needs **(RP9)**
- We kept it as closely as possible, to eliminate all sorts of failures of the whole project at the end of the day. **(RP)**
- All the customizations that were made is mostly for integrations and in terms of approvals and then other reports. **(RP6)**
- There were customizations allowed, only where necessary. The moment you put customizations, you have difficulty with the next upgrade. **(RP2, RP4)**
- We said we choose the system that was internationally benchmarked, we said from the beginning we'd rather adopt our processes. **(RP4)**
- No formal BPR was conducted. **(RP9)**

4.4.2.2 Knowledge and Skills of ERP Implementation Team

The segment "Knowledge and Skills of ERP Implementation Team" is in response to Question 1 in Section C of the interview guide

"To me it was done, we will not say perfect but it was done good given the fact that key support stakeholders, the consultants who had been interfuse in the system, the key support from the IS team", "guidance was given as well to ensure that whatever we are implementing is going according to plan", " basic understanding and knowledge which we needed at the time" (RP1)

"We had the implementation team from SILNAM, then we had the team on GIPF side with the HR people who were a separate team with their leader, I think their leader was absent, then we had the Financial team, with their leader .., and then we had the IS team as well, because you need all those expertise to get it up and running", "there were regular updates held with Exco and even at times with the board where the team leaders will now go along with the GM and so on, just to update them also on the progress that they are not left in the dark" (RP2)

"Well so we had to work together to get this all working and I think everybody was working together to share knowledge, because in the end it was to the benefit of everybody, because if you don't share, you don't get anywhere"(RP2)

"I would say on the business part, they had knowledge and skills, but since it was a new system all of us formed part of that team that got accustomed to the system; and as we went along since it was a new system we were not so on track or on power with everything. So what the team members actually put in the system, it's at the end of the day what we got out of the system and in terms of that I think they really had the knowledge and skills" (RP3)

"Yes we do acknowledge a lack of change control experts. There were no change control expert on board at that time.", "I believe the implementation team had done the job properly and obviously the consultants had their own team members"(RP4)

"From the IT department, we lacked some knowledge, not from a technical side. I would say from the system side yes, from the finance and from that particular, from this ERP, we did not have a lot of knowledge that's why we appointed somebody with the correct knowledge.", " The big issue we had from HR was HR did not have a manager on board. What happened there was they provided us with the highest grade in the department." , "The other people in the department did not always respect him, not always give him the necessary co-operation." (RP4)

"Yes, the key stakeholders is involved," " I remember on the finance team, for example, I know that there were some people that were not really involved, so I do not know if these people were not included in the committee or they were just not available", "but overly representatives from other stakeholders was very fine, from finance there was also representatives it's just that there's some key components in Finance that were also not really involved in the implementation team". (RP6)

"I think it was done properly, it was process driven, so each department actually had a part to play", "Yes, all of them were involved from the consultants itself, SILNAM, to GIPF itself", " so obviously from the implementer side, the system knowledge was there, so they had to adapt to the knowledge of the organisation as in GIPF culture and knowledge, how they go about doing their normal day to day. From GIPF side they had also their

knowledge of what they do because they had to transfer for SILNAM to understand, but in terms of system knowledge, they knew process wise. Just technologically how to capture and all those things this is what had to be transferred over to GIPF, which in the end, they really knew well plus they had members within GIPF who actually knew the system and who had worked on the system before". They did have the knowledge and skills, they were actually very good, they knew exactly what they wanted and they could ask other people in the team of what is missing" (RP7)

"Together there was a challenge somehow because of HR. They were new, because they were expected for contributing their input on what exactly they will need and as this was the first process it was somehow difficult for them". (RP8)

"YES all stakeholders have the skills and knowledge as per their respective functions within the GIPF. The Auditors for Project Reviewer (PWC) were appointed through Tender Process" (RP9)

Summary of Key Findings on: Knowledge and Skills of ERP Implementation Team.

- The team consisted of the implementation team from SILNAM, the team on GIPF side with the HR people who were a separate team with their leader, I think their leader was absent, then we had the Financial team, with their leader .., and then we had the IS team as well, because you need all those expertise to get it up and running. **(RP2, RP4)**
- Yes we do acknowledge a lack of change control experts. There were no change control expert on board at that time. **(RP4)**
- YES all stakeholders have the skills and knowledge as per their respective functions within the GIPF. **(RP7, RP9)**
- From finance there were also representatives. It was just that there were some key components in Finance that were also not really involved in the implementation team. **(RP6)**

4.4.2.3 Proper Testing and Troubleshooting:

The segment "Proper Testing and Troubleshooting" is in response to Question 5 in Section C of the interview guide.

"Yes we did, for example on the purchasing and AP module, we happened to have certain invoices raised or taken. Then we took those data and tried to use it and see what would be the implication if the processing happened at that level and then within the framework we followed the business process and see whether it is really what the system is also doing and then based on that we concluded it's now ok". (RP1)

"I think its aims methodology that was used with the implementation, part of that is very specific and the testing as well, so every module for instance will have its own test scripts, " so I can honestly say there was a lot of testing done. We even had weekends that we sit doing testing really, so the testing was done properly and it was done

according to the methodology, the same for the customization and then the interfacing". (RP2)

"The whole implementation was done according to Oracle Aims Methodology. They have a very, I believe, a very field tested methodology,.. I think it was documented properly, it was tested properly". (RP4)

"It's the Oracle Methodology that was used, AIMS Methodology...". I was saying testing was supposed to be done by the users only, but because of some other limitations, they couldn't do it on their own they had to get support from the consultants. Now because you had consultants testing next to you, they just say next, next, next. you wouldn't really do thorough testing anymore, because the consultants already knows what is working fine and what is not, then the user will be concentrating more on technology or on the system instead of the business processes". (RP6)

"User acceptance testing where user will test all functionalities on the system and agree on how they will sign this off and agree". (RP7)

"There was a proper issue management process collect system, where all issues that were raised by the users was identified and signed off and this document should be available to see all issues raised on who signed it off and how it was resolved". (RP7)
"we call it user acceptance testing where user will test all functionalities on the system and agree on how, they will sign this off and agree, if they are not happy, they pointed out they are not happy with this functionality or it is not actually working properly". "All issues that were raised by the users were identified and signed off". (RP8)

"Methodology had followed the AIMS methodology with Requirement Definition, Solution Modelling, Development, Testing, Training, User Acceptance Testing, Live deployment". (RP9)

The Project Charter specified that Oracle Application Methodology (AIM) will be used for the implementation of the IFMIS/HRMIS project.

Stability of the system was identified in the risk management report. The plan to ensure that the system was stable was to ensure a comprehensive testing in terms of functionality of the system, the business flows, proper interface testing and to ensure all aspects of the system was documented.

Summary of Key Findings on: Proper Testing and Troubleshooting.

- A structural user acceptance testing was conducted to test if the functionalities are working correctly on the new system. **(RP1, RP2, RP4, RP7, RP8)**
- A methodology called Oracle AIMS was followed in which a structural testing phase was conducted. **(RP2, RP4, RP6, RP9)**
- Respondents also raised that the testing in some cases followed a controlled approach as the implementing consultants were present and at times took a lead of the testing process. This may have prevented a thorough testing by user should have they been left alone during testing. **(RP6)**

- Testing also included real cases or test scripts by which the business process is followed and test that the system is responding accordingly, and testing users pronounced that the system is ok. **(RP1, RP2)**
- The same structural testing method used to test functional system process was applied to test customized programmes and interfaces. **(RP2)**
- Issues resulting from testing were properly recorded and managed well. Test cases were also signed off. **(RP7, RP8)**

4.4.2.4 Project Monitoring and Evaluation:

The segment "Project Monitoring and Evaluation" is in response to Question 6 in Section C of the interview guide

"Most of the monitoring was done through regular meetings, review meetings, update meetings just to see whether there is something going outside the plan" (RP1)

"We developed in consultation with the consultant there were certain programmes developed at a time, so that we can monitor the progress of addressing those issues which we highlighted that is still unresolved, and then in process we addressed it accordingly." (RP1)

"most of the KPI's if I remember correctly had some kind of a signed document linked to it",... "there were certain milestones that needed to be reached", "We had weekly meetings, we had a lot of meetings". (RP2)

"We used MS project for the project plan", "Right from the beginning we had an external auditor on board from PWC, and they were part of the implementation team". (RP4)

"At the end of the implementation they provided us quite a hefty report on shortcomings and a notice that we should still address going forward". (RP4)

"There for example was Microsoft Project", "All issues were then noted down and every stage of the implementation was then marked out on the Microsoft project",... "then change request forms that were created, where if something needed to be changed on production",... "I think there were also regular meetings held". (RP5)

"Ok for the project monitoring tools there was a weekly meeting, that briefed all stakeholders on the status of the project",... "then out of that, they just draw a status report", "The project steering committee", "at the beginning there were mostly focusing on the status of the project and issues...towards the end they also focused on small issues which has now included gap correction processes.", "there was also an issue list circulated". (RP6)

"Project Steering committee met on a predefined schedule, then there were also project meetings where you have regular meetings to give status on the project". "There was also a monitoring process through project meetings that were done". (RP7)

"Monitoring of the Project Plan on tasks/milestones completed against plan", "Project Report". (RP8)

According to the Project Charter after each stage a deliverable had to signed off and then filed.

1. **Project Definition:** Deliverable: Project Management Plan
2. **Requirement Gathering:** Deliverable: RD050: Business Requirement Document
3. **Business Process Mapping:** Deliverable: BR030 Solution Mapping Document
4. **Gap Analysis:** Deliverable: MD050 Extended Functional Design
5. **Business Scenario Test Scripts:** Deliverable: TE040 Business Test Scenarios
6. **Setup and Validation:** Deliverable: BR110 Application Set up Document
7. **Customisation:** MD070 Extensions Technical Design,
8. **Business System Testing:** TE020 Unit Test Cases
9. **User Acceptance Testing:** Deliverable: TE130 – Acceptance Test Documents
10. **User Training:** Deliverable: User Manuals
11. **Data Migration:** Deliverable: Data Migration Plan / Data specifications / Control Reports
12. **Parallel run:** Deliverable: Transaction / MIS reports
13. **Production Go-Live and Support:** Deliverables: Production Environment

Summary of Key Findings on: Project Monitoring and Evaluation

- Regular project status and review meetings were held throughout the duration of the system implementation. **(RP1, RP2, RP5, RP6, RP7)**
- A project steering committee was also constituted to ensure that there is a body responsible for reviewing project status and manage critical issues that have been recorded. **(RP7, RP8)**
- An external auditor was also brought on board to ensure effective monitoring and evaluation of the project deliverables and that milestones are reached. **(RP4, RP8)**
- There were plenty of monitoring tools including meetings, Microsoft Project plans, and project status reports, issue list that are held or circulated as evidence of the monitoring activities. **(RP1, RP4, RP5, RP6, RP7, RP8)**

4.4.2.6 Change Programme and Culture Initiative:

The segment "Change Programme and Culture Initiative" is in response to Question 2 in Section C of the interview guide

"Ok, not that I was aware of, but perhaps one can relate it to the project team, which was established specifically for this implementation of the ERP, because there was a project team I believe with our formal manager was also part of that team and they have been going on and getting feedback to the necessary stakeholders to assist in terms of guiding the process, so within the framework there were some programmes". (RP1)

"Yes we just tried to, the moment you see somebody is not well with something, you need to address it, discuss it in the meetings and then try to address it". (RP2)

"We had like weekly meeting...through those meetings we could actually clearly address these issues. amend things through those meetings", "because of that issues that came up during the testing and during the implementation that we still had meetings and address those issues accordingly in these meetings". (RP3)

"I cannot think of any". (RP4)

"The one that just came to mind is that there was an introduction done between the ERP implementation team and the people ok. So that was good at least to familiarize the people with each other so it makes it a bit easier for the ERP implementation team to be able to ask or approach the employees or the management for clarification or for information". (RP5)

"No, not that I know of that there was a programme". (RP6)

"Probably the management or people's attitude towards the implementation was already executed, I mean they were ready to start, so somehow they must have been a change management, information sharing, change management process where they informed everybody of what is to come, what is the benefits of implementing a new system". (RP7)

"No". (RP8)

"I do not recall of any formal change programmes or culture initiative". (RP9)

People who were reluctant to change were identified as a risk in the risk analysis, the solution proposed was to make sure that there is proper:

- Internal communication
- Manage training and learning
- Realign business process
- Enforce business procedures
- Compile operational manuals
- Keep the motivation level for the project
- Ensure a participative approach
- Capitalize on team building exercise
- Address issued raised by people
-

Summary of Key Findings on: Change Programme and Culture Initiative

- Respondents do not recall a specific change management programme in place, but also indicated that change management was probably taken care within the many project status meetings and prompt reporting to stakeholders. **(RP1, RP2, RP3, RP4, RP5, RP6, RP7, RP8)**
- The attitude of people was already in a system ready mode. People were already prepared take on the new system. **(RP7)**
- A project team was constituted and through this team change management initiatives were executed. The team was introduced to the business process owners to facilitate easy sharing of information and effective communication. **(RP1, RP5)**

4.4.2.5 Computer Culture and Legacy Systems:

The segment “Computer Culture and Legacy Systems” is in response to Question 7 in Section C of the interview guide

"I honestly think the system we implemented is above certain staff member's computer literacy skills", "for some people it's more difficult than others, so I just think it's a fact that three four years later, you must constantly educate the people or motivate them about it and get them going on it." (RP2)

"It had a big influence on the implementation because since we all computer based or the whole entire organisation is computer based, it actually made it a little bit easier, not much but a little bit easier in terms of how to operate with it". (RP3)

"I believe the people were actually quite computer literate", "The computer literacy in the organisation is quite high". (RP4)

"Before we moved the data, they had an audit team looking at all the leave data, because we move the data and the payroll data, so we relied on an internal audit.....On the financial side they have been audited in April". (RP4)

"So the more computer literate employees were the ones that did not resist the ERP Implementation as much as the illiterate ones". (RP5)

"Yes I would say it does have an impact, but in this case it was a good impact, because most users were already having basic computer skills, it was easy or better for them to adapt to the system". (RP6)

"Yes, it did, I mean, everybody was more knowledgeable with their job. They were system orientated to align them to a new system". (RP7)

"We were already computer literate, to know how the system works, it was more on the ERP System yes on the system side, but not really computer literacy". (RP8)

"People were already well versed with Computer, So adoption was fast". (RP9)

Summary of Key Findings on: Computer Culture and Legacy Systems

- Adoption of the new system was fast as a large population of the organisation is highly computer literate. **(RP3, RP4,RP5,RP6,RP7,RP8,RP9)**
- There were few people that were not up to the pace of adoption as their computer skills were lacking behind. It shows the need to consistently educate people so that they keep up with the pace of IT changes. **(RP1, RP5)**

4.4.2.7 Effectiveness of the System:

The segment “Effectiveness of the System” is in response to Question 8 in Section C of the interview guide

“I think it does, but we had a few operator related problems, so it’s not that the system is not working, it’s not that the system is not efficient”. (RP2)

“Maybe one or two delays but the rest of the benefits is much better than previous, so from my opinion efficiently and effectively, yes, it does have.” (RP2)

“With regard to the procurement process it does it effectively and efficiently, I really don’t have any problems”.

“The system is satisfactory in the sense that it actually, provides required output, yes it give us what we currently want”. (RP3)

“If you look at our business operations, our main purpose is to pay benefits, to deliver a service to our people. I believe that is done efficiently in the sense that it is now integrated with the pension system; the old system there was no integration at all. We developed an interface and I believe definitely the whole process of service delivery was changed. Also on the HR side, the HR department delivers a service to the internal customers with the self-help module and so I think it’s much easier for people now to do things, to get information. (RP4)

“It promotes transparency also accurate transactions, the people that have been working there are now more, the more experience you gain the more efficient you become, obviously at the beginning, it will start off slow where people will take a bit of time to process transactions, but as things went along, you could see that everybody was growing confidence and they were becoming more efficient in their work, because the reporting also shows more efficiency.” (RP7)

Summary of Key Findings on: Effectiveness of the System

- Apart from few delays and some minor technical problems that sometimes arise, the system is efficient and has improved effectiveness of operations. **(RP2)**
- The system has really improved the procurement process greatly and the output is really what the organisation wants. **(RP3)**

- The overall business process and effectiveness of the operation has been greatly improved through integration of the pension fund and ERP system. This benefits is also extended to the payroll module. **(RP4)**
- The transactions are more accurate, timely and there is transparency into processes. With time you could see people have gained confidence in their work and this can only increase efficiency and effectiveness. **(RP7)**

4.4.3 Change Management Strategies

Data Summary Sub-Question 3

What are the most important mechanisms of effective change management in the implementation of ERP Systems?

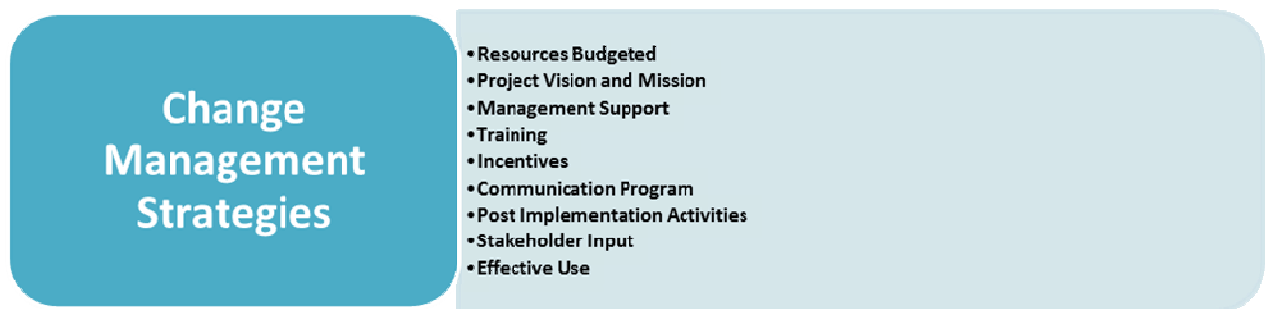


Figure 4.4 Change Management Strategies. (B. L. Sitler 2013 own diagram)

4.4.3.1 Proper Resources Budgeted for the Project:

The segment “Proper Resources Budgeted for the Project” is in response to Question 1 in Section D of the interview guide

"I think the budget was not an issue so we had the necessary resources for it". (RP1)

"I was thinking of a tender that was awarded and what amount it was budgeted for". (RP2)

"Although it was properly budgeted for in the actual implementation, but with regards to additional training, additional products needed. We were actually a little short on that, but eventually since management was in actual agreement with this, they weren't hesitant and actually made funds available". (RP3)

"Adequate funds were made available"... "Funding was not a problem on this project". (RP4)

"They had a budget yes, "I think they made funds available". (RP5)

"Yes, I believe it was properly budgeted for, there were adequate funds". (RP6)

"Yes they did budget properly and they were very cost conscious also, but I would say they budgeted properly". (RP7)

"The funds were there, because they needed this to be done". (RP8)

Summary of Key Findings on: Proper Resources Budgeted for the Project.

- There is a consensus that the implementation was adequately funded. **(RP1, RP2, RP3, RP4, RP5, RP6, RP7, RP8)**
- With regards to additional training, and additional products, the initial budget did not fully cover this, but additional budget was later made available as the management concurred with the need. **(RP3)**

4.4.3.2 Project Plan and Vision Clearly defined:

The segment "Project Plan and Vision Clearly defined" is in response to Question 2 in Section D of the interview guide

"Is to get rid of all this manual things that we were doing"... "then obviously to resolve problems we were having and hopefully improve on the way we were doing things". (RP2)

"We actually really wanted from this project is actually, a proper system that can give us reports at the end or whenever period, actually really wanted something to give us accurate information". (RP3)

"The vision and mission I would say was to take the organisation into the 21st century" (RP4)

"The mission or at least the vision was at least to have GIPF use and ERP Solution"... "they wanted people to move away from the manual ways of doing things". (RP5)

"The first thing is the integration, to achieve, the integration among the business processes". (RP6)

"Their mission was to finish this project on the budgeted time, also I think, they understood that this project was to ease their day to day operations, to bring efficiency within the fund and to solve all their integration problems". (RP7)

"To ease the workload, to do away with manual side of this, to be more computer-orientated". (RP8)

Summary of Key Findings on: Project Plan and Vision Clearly defined:

- The vision was to achieve process automation and integration so that one can have overall accurate information. **(RP2, RP3)**
- To achieve operational efficiency through process automation and modules integration. **(RP1, RP5, RP6, RP7, RP8)**

- Adequate reports for management and operations that gives accurate information. **(RP3)**
- To complete the project within planned time frame and budget. **(RP7)**

4.4.3.3 Proper Management Support:

The segment “Proper Management Support” is in response to Question 3 in Section D of the interview guide.

“Perhaps by the time we were implementing, the manager who was responsible for the finance side was very much involved in terms of making sure that each and every module which needed to change, that needed to be automated, happened”. (RP1)

“Management was behind the scheme to ensure that things happen”. (RP1)

“I think there was a lot of support and buy in from the management yes”. (RP2)

“They supported this implementation throughout and even after we went live”. (RP3)

“I think the support started from the board, so from the top, there was definitely support, I believe management was supportive of the whole process”. (RP4)

“I would say that there was definitely management support at every stage of the implementation, starting from the beginning to the actual implementation”... “So I think there was support at every stage of the project”. (RP5)

“The IT manager really had that support about the system itself, like he had really, he had confidence in the system and I think that really helped other management also to have confidence in the system”,.... “ They were involved, but’s it’s just that it’s not on the same level as the IT Manager”. (R6)

“Yes there was management support because as I said the project was well-driven, they had backing from EXCO”. (RP7)

“The management, the support in terms of money was there, but the support in terms of the physical action was not”.... “I remember very well sitting here, trying to figure out up to the last hours and my GM would just pass by, going home”. (RP8)

Summary of Key Findings on: Proper Management Support

- There is a consensus that there was adequate buy-in and support from the management, which had a direct influence on delivering the project successfully. **(RP1 – R6)**
- The support started even from the Top layer of Board and EXCO. **(RP4, RP7)**

4.4.3.4 The Training Programme that was specified for the Implementation:

The segment “Training Programme” is in response to Question 4 in Section D of the interview guide.

"The formal training which we attended I think was mainly based on a certain module". (RP1)

"They give you an overview during the training and then you come back and try and implement what you have learned". (RP1)

"The emphasis was mostly on scheduled training, there was structured formalized training that was presented by SILNAM". (RP2)

".... I think with the training that was identified, on the financial side i, there was a lot of time spent on the training, making sure everybody was trained and if they were not happy, they were retrained and there were refresher training and then on the HR side, because that affects the whole company, it was also made sure everybody was comfortable". (RP2)

"The system was actually divided into modules, we had our specific training,.....so what we did is intensive training was actually given". (RP3)

"The training that was given was mainly functional training on various modules of the system". (RP4)

"Technical training on how to install patches, there was business process training". (RP5)

"The training that was given during the implementation was basically using the train-the-trainer approach,...it was functional training". (RP6)

"We also went about it on train the trainer approach, where users were more interactive within the training,....., so it was both processed driven and also based on all functions within the system". (RP7)

"The training that was done was not really extensive". (RP8)

According to the Project Charter between SILNAM and GIPF the user training would be in view of the strategy of GIPF for building internal capacity, the "Train the Trainer" approach was recommended. The core team for the project will follow "boot camp" training on the modules of the IFMIS/HRMIS. The core team members will allow the users to become familiar with the operation of each module as per GIPF business processes. Training manuals would be developed based on Oracle Standard Training manuals aligned with GIPF business procedures.

Summary of Key Findings on: Training Programme

- Adequate modular training following the train-of-trainer (ToT) approach in which the users are encouraging to be more active and participative was used for all functional training. **(RP1,RP2,RP3,RP4,RP6,RP7)**
- There was also technical training conducted. **(RP5)**

- This structured and formal system training conducted by SILNAM ensured that everyone understood well and the organisation was comfortable with their new system. **(RP2)**

4.4.3.5 Incentives given to the ERP Implementation Team:

The segment “Incentives given” is in response to Question 5 in Section D of the interview guide

"No, None, probably they just commented on it to say, this time around we did well". (RP1)

"None". (RP2)

Nothing, we didn't get anything, but I think we should at least get certificates because it's a big system". (RP3)

"Not that I'm aware off". (RP4)

"Incentives I wouldn't know, and none were given to me". (RP5)

"No I don't think so". (RP6)

"Nothing". (RP8)

Summary of Key Findings on: Incentives given to the ERP Implementation Team

- No formalized incentives were given to the implementation team. **(RP1-RP8)**
- Respondent felt that since the system was a big implementation project, a token of formal appreciation such as receiving certificates would have been appropriate. **(RP3)**

4.4.3.6. Proper Communication Programme and stakeholders always involved:

The segment “Communication Programme and Stakeholder Involvement” is in response to Question 6 in Section D of the interview guide

"During that process I believe the communication was fairly ok". (RP1)

"Gottlieb at some stages gathered information that was put on the Intranet or we had a newsletter at some stage and then it was included in the newsletter".. "we had initial meetings"... "This was one of the projects I was working on that had the most interacting communication, regular meetings and making sure we're on track". (RP2)

"Throughout there were emails circulated and this was done during the last meeting or during the last training session and had to give input afterwards and then you had to come back to another training session". (RP3)

"Well we communicated...I think it could have been better". (RP4)

"The key stakeholders that were actually involved, within for example each of the modules,then there were meetings". (RP5)

"There used to be meetings and then they were normally followed by project status reports, and just emails here and there". (RP6)

"Yes there was, meeting with all parties that's going to be affected by the change, by the system". (RP7)

"Proper communication programme was there before, during the implementation programme here and there, was not so because we don't think the communication was enough". (RP8)

Summary of Key Findings on: Communication Programme

- There was adequate communication within the implementation team. There were meetings, even newsletter and emails correspondence throughout the project phase. **(RP1,RP2,RP3,RP6,RP7)**
- Communication to the rest of the stakeholders could be better. **(RP4,RP8)**

4.5 Reliability of Instrument

The open-ended questionnaire was pilot tested on a test participant. Some of the questions on the interview guide that was ambiguous were then improved.

There were no problems experienced during the two weeks of field work and the researcher found the instrument highly reliable for the purpose of data collection.

4.6 Validity of Instrument

The researcher conducted all the interviews on the basis of informed consent from participants. There was no incident of interview bias or resistance. All participants provided information out of free will, without being seduced by incentives.

4.7 SUMMARY

The researcher analysed using the main research question and three sub-questions. A purposeful sample was drawn based on 10 GIPF core team members that were originally involved in 2009 in the implementation of the Oracle business suite. The criteria for

inclusion of the research participants were based on their roles and responsibilities in the implementation. Half of the sample were from the client GIPF and the other half from the consultants SILNAM company.

The results were transcribed and excerpts reported verbatim. The content was analysed and the results categorized in three major thematic areas of:

- (1) **Change Process** – all transactions were captured onto the new system. It met operational goals of the stakeholders and internal users of the system.
- (2) **Critical Success Factors** – the human factor was important and people were assisted with training and additional funds to enhance commitment.
- (3) **Change Management Strategies** - changes were monitored weekly and monthly and deviations corrected timely during implementation. The cost-benefit of the new system was realised by all.

- (4) In the next chapter a detailed discussion shall be given on the implications of the results. The conclusions shall be made in relation to the research objectives of the study.

CHAPTER 5: DISCUSSION

5.1 Introduction

The main research question of this study is: “What was the change management approach undertaken to implement ERP at GIPF, and how can the application of change management strategies enable a more effective ERP Implementation?” The data was obtained through semi-structured, in-depth interviews with nine members of the ERP implementation team. Using themes and sub-themes, the researcher was able to identify the following three categories: the change process, critical success factors and change management strategies.

Theme 1 relates to the change process, theme 2 relates to the critical success factors that are critical to the success of an ERP implementation and theme 3 is related to the change management strategies for an effective ERP implantation.

5.2 Discussion of Results

A more detailed discussion of the results necessitates a revisit of the main research question and related sub-questions, in order to gain a deeper understanding of the findings of this study. For that reason let us look at the questions at hand in Chapter 4.

The main research question of the approach undertaken to implement ERP at GIPF has broadly been discussed in the previous chapter. In a nutshell consultants were hired to assist the implementation process. A GIPF core team was established to guide the process and weekly and monthly monitoring was conducted to ensure that the process stayed on course. A Training-of-Trainers (ToTs) was followed to ensure that the implementers became familiar with the new Oracle business suite. We now turn to non-technical aspects to determine what other factors had contributed to streamline the implementation process through revisiting sub-questions.

5.2.1 Research Sub-Question 1

What is Change Management theory and how is it applied to ERP implementations?

Change management is a critical part of any project that leads, manages, and enables people to accept new processes, technologies, systems, structures, and values. It is the set of activities that helps people transition from their present way of working to the desired way of working.

The need for change:

McCall (cited in Self & Schreuder,2009) observed that failing to select, train, and promote individuals equipped to deal with a changing environment could lead to a management team being ill-equipped to recognise the need for change, and then successfully guide the organization through the process of change

The team acknowledged that there would be changes to the way they were doing their work. That most of the business processes would be automated and that the way that they conducted their daily and period-end activities would change. The members indicated that there were a lot of shortcomings with the current HR and financial system and that there was no integration between the systems at all. The new financial system and human resource management system would be implemented that would integrate with the current pension fund system.

The team understood that there would be a change in the business processes, the current technology and systems. Everyone understood why it was important to implement the new ERP system.

The research participants overwhelmingly understood that there was a need for change and that a sense of urgency surrounded the implementation of the ERP system.

Organisation Sub-systems

According to Mullins (cited in Macredie, 1991) the open systems approach was to structure the functions of a business in such a manner that, through clearly defined lines of coordination and interdependence, the overall business objectives are collectively pursued. The emphasis was on achieving overall synergy, rather than on optimising the performance of any individual part per se. This is clearly found in the principles mooted by Miller (as cited by Burns,2009).

Miller's (1967) four principles

- 1) The organisational goals and values sub-system; organisation stated objectives and values that it wishes to promote. To operate effectively, the organisation has to ensure that its goals and values are compatible not only with each other, but also with its external and internal environment.

The team indicated that for the ERP implementation they had to make sure that the new system would support all core functions and company objectives.

The system should be compatible with the operational goals of the organization serving the pensioners and abide to the values of accountability and transparency

- 2) The technical sub-system is the specific combination of knowledge, techniques and technologies which an organisation requires in order to function. The concern here is compatibility and appropriateness of these in relation to an organisation's particular circumstance.

According to the team that they wanted to preserve strategy of contributions, to make sure that it is in line with the rules of the fund. The system should be in terms of your general accounting practice. The new Fixed Assets (FA) module had to confirm to the reducing balance method.

- 3) The psychosocial sub-system is also variously referred to as organisational climate and organisational culture. It is influenced by an organisation's environment, history, as well as its tasks, technology and structure.

The main issue that the team mentioned in relation to the psychosocial sub-system that they wanted to change is the culture change which is to push people to the mindset of doing things for a one month, instead of completing the activities at the end of the financial year. The new ERP system would directly change the way that the users completed the daily tasks and period-end tasks. The old systems that were in place did not have much control on when a task was completed. With the new system the task of the users changed which mean that the mindset of people also needed to change.

- 4) The managerial sub-system is responsible for relating an organisation to its environment, setting goals, determining values, developing comprehensive strategic and operational plans, designing structure and establishing control processes. During the discussion it became clear that the Board and executive management took the decision to implement a new ERP system to support the organisation's strategic and operational plan. The need was identified by the board, due to audit reports, various audit reports that was produced. There was a lack of control in the financial system and there was no system for HR.

Management also decided that it would be best to keep the current approval hierarchies and that the system should also support the current organisational structure.

The Benefits of the ERP System

Roman (2009) put forward the top ten benefits of ERP systems:

1. Enhance Technology
2. Efficiency
3. Integrated Information
4. Reporting
5. User Friendly
6. Access to data
7. Customer Service
8. Functionality
9. Communication
10. Security

The research participants clearly understood the benefits of the new ERP system. In terms of integrated information, reporting, communication and access to data the research participants stated that all information will be available in terms of reporting, that all data will be stored in a central database and that the data would be available for other systems to utilise.

Research participants also referred to the security and functionality that the system provided. They stated that the system provided query functionalities and an audit trail.

5.2.2 The Research Sub-Question 2

What are the most important Critical Success Factors (CSF) that will facilitate the result of the ERP Implementation?

Functionality and Maintained Scope, Business Process Re-engineering

According to Gargeya and Brady (cited in Kalbasi, 2007) the ability to implement ERP with minimal customization required assistance from several other factors, primarily streamlining operations and re-engineering the business - both of which will help the organization to run in a more straightforward manner. Thorough planning is also a close partner, as it is threaded through the plans from scope to budgets.

The implementation team understood that the system was internationally benchmarked and that it would be beneficial if they stayed within the scope of the project and not to do a lot of customization. Limited customization was done where the system did not have the functionality, and reports were developed to cater for the organizations reporting needs. There was some amount of business process engineering done, the

team tried to map all business processes on the system without any customization. It was clear from the different responses from the team that there was no formal BPR done.

Knowledge and Skills of ERP Implementation Team

Cliffe highlighted that (cited in Finney & Corbett, 2007) it has also been repeatedly mentioned throughout the literature that there is a critical need to put in place a solid, core implementation team that is comprised of the organization's best and brightest individuals. These individuals should have a proven reputation.

Calvert (2006) stated that the change team should be cross-functional, dedicated full-time to the task of managing change. Lientz and Rea (cited in Calvert, 2006) further listed skills such as problem-solving, effective communicators, and knowledge of business processes – as the more generic skills required of change agents

According to some of the team members everyone that formed part of the implementation team possessed the necessary skills and knowledge. They mostly worked as a team to assist each other and to share information. The team indicated that the consultant had the system knowledge, the IS department had the necessary technical skills and the finance and HR department had the necessary business knowledge. There was a lot of skills transfer from the consultants to the business and vice versa, all knowledge and skills were shared among the team.

One team member stated that there were still some skills lacking among some of the members from the finance department. That this was either due to lack of interest or the individuals did not have the necessary knowledge and skills that were required.

Change Management and Culture

According to Falkowski et al (cited in Shel, 2009) change management was vital and starts from the beginning of the project and continues throughout the project life cycle. Organizational culture and structural changes should be managed.

Fang and Patrecia (2005) claimed that organisational culture can significantly affect the ERP implementation in a company. It can inhibit or support ERP implementation. It also affects the efficient and effective use of ERP that can support the success or even lead to the failure of ERP project.

Based on the comments from the team there was no formal change programme or culture initiative. It was mostly done through regular meetings and regular feedback to the appropriate stakeholders. If an issue was raised or observed it was discussed in meetings and a resolution was offered by the team members.

The people issue was also identified in the formal risk management plan dated 20th June 2008 that was compiled for the ERP implementation. The plan highlighted that people are reluctant to change associated with new Project Implementation. The explanation that was specified in the plan was that the impact was high on the project and that the following should be done to mitigate the risk:

To ensure proper Change Management Process

- Ensure Proper Internal Communication
- Manage Training and Learning
- Realign Business Process
- Enforce Business Procedures
- Compile Operation Manuals
- Keep the motivation level high for the project
- Ensure participative Approach
- Capitalise on Team building exercise
- Address issues raised by people

Testing and Troubleshooting

According to Finney and Corbett (2007) a testing exercise was included during the final stage of the implementation process by the project team. This process was important to ensure the validity and the technicality of the software as well as the business process configurations (Nat et al., 2001, 2003; Finney and Corbett 2007).

Nah et al (2001) argued that troubleshooting is necessary for ERP implementation so as to prepare for unexpected circumstances or crises situation. This process was an ongoing obligation for an implementation process.

Gargeya and Brady (cited in Kalbasi, 2007) argued that “after months or years of development, it may be feasible to assume that both team members as well as executive management are tired of dealing with the project and just want it to be completed. The result of this myopic thinking, however, is that testing is reduced or ignored, and “red flags” are disregarded.

Kalbasi (2007) suggested important factors for testing:

- 1) Vigorous and sophisticated software testing before go-live date is essential.
- 2) Troubleshooting errors is critical.
- 3) There should be a plan for migrating and cleaning up data.

AIM methodology is Oracle's software for Application Implementation Methodology (AIM). It contains several templates to be used for documentation during the full implementation life cycle, such as sample test script or business process templates.

The main response from the team was that they followed AIM's Methodology for testing and troubleshooting. Test scripts were compiled based on the AIM's Methodology to guide the users when the testing was conducted on the different modules and for integration testing.

One important factor that was mentioned by one team member was that during the testing there was always a consultant guiding them, due to this they mostly concentrated on the technology and functionality of the system and not really on the business processes.

The team also referred to an issue list that was kept for any issues that was raised during the testing. These issues had to be resolved before the final sign-off.

Monitoring and Evaluation

The monitoring and evaluation of performance was a critical factor in the success of any IT system, including ERP systems. Monitoring performance was an integrated and holistic concept, which involved the tangible and intangible aspects of the organization (Al-Mashari et al. 2003).

Ngai et al.(2008) stated through monitoring and feedback from the users, the performance of the ERP system can be reviewed and evaluated to see whether it is achieving business goals and objectives.

In order to be able to pilot the project, one must put indicators in place that will allow for adequate visibility. In that sense, it is essential to define a monitoring plan from the outset. Each objective must be reflected in one or more indicators that are updated regularly and are associated with an adequate correction of disparities. Such an approach must be supported by the use of monitoring tools that everyone can use(Françoise et al., 2009).

Most of the team members indicated that monitoring was mostly done through regular meetings. There was also an external auditor appointed from PWC that formed part of the team to monitor the progress of the ERP implementation.

The other monitoring tool that was used according to the team was the Microsoft (MS) Project. After each stage of the project once a certain milestone was completed a key deliverable had to be signed off. The project charter defined each stage and what key deliverable had to be signed off based on the AIMS Methodology.

An issue logged was also maintained during the implementation, all issues had to be resolved and signed-off before the final sign off of the implementation project was done.

Legacy Systems

They are a good source of information for ERP implementations and the possible problems that can be found during the implementation. When implementing an ERP it is necessary to decide which legacy systems will be replaced and the need to interface with those legacy systems for which the ERP does not provide an adequate replacement (Casanovas, 2004).

The team identified the following key aspects of the organization and culture that was critical to the project:

- That they wanted to preserve strategy of contributions, to make sure that it is in line with the rules of the fund;
- The chain of approval of purchase orders and approval hierarchies;
- That the system should cater for all core functions and company objectives;
- The operational goals of the organization serving the pensioners and the stakeholders abide to the values of accountability and transparency;
- The current technology that was available was referred to as the IT infrastructure.

Computer Culture

According to Huang (2001) computer culture referred to the company's history of computing, employees' attitudes towards computers, and organisational dependence on computers. A company with a strong culture would have better understanding of application functionality, data management, and more accepting of ERP systems.

There were different responses to computer culture in the organization. One of the team members indicated that the ERP system was above certain staff members' computer literacy skills. Another issue that was raised in terms of users' computer skills were that most of the resistance were from the users that lacked some computer literacy skills. Other members pointed out that the computer literacy made it a little bit easier to operate the system.

The following points were discussed under Change Management Strategies

- Top Management Support
- Business Plan and Vision
- Communication

- Executive Champion and Project Sponsor

5.2.3 The Research Sub-Question 3

What are the most important mechanisms of effective change management in the implementation of ERP Systems?

Resources Budgeted for the Implementation

Calvert (2007) indicated that change resources refer to the financial, human, technological, and capital assets utilised by the change effort.

According to Razi and Turn (cited in Fang & Patrecia, 2005) top management needed to allocate enough budgets to fund the project, such as hiring competent consultants and training employees. Given the complex nature of an ERP system and its costly implementation prospect, it is essential for a company to find out its financial, technological and human resources strengths before embarking on an ERP system implementation

Resources must be clearly identified and made available to middle managers and operational or frontline staff in order to successfully implement an initiative to support transformational change. Necessary resources may include additional staffing, additional funding, training in both change management and project management, administrative support, technical support, change management support, project management support, and communication tools (Berns, Charboneau, & Foth, 2007).

The team members felt that there were enough funds and resources budgeted for the implementation. The resources were made available because management wanted the project to be completed; they wanted it to succeed. There were funds made available when the users required additional training on the system.

The other factor that management also took into consideration was that there was limited number of staff and that the team members were also required to do the daily duties. Most of the team members from the business were allocated to the project on a part-time basis. It was required from them to give their input on the project and also to complete their office work. No additional resources were made available to assist them so that they could work on the project fulltime.

Executive Champion

Nah et al stated (cited in Calvert, 2006) that a project champion is more important in ERP implementations than in other IS implementations because ERP success hinges on overall organisational commitment and perseverance.”

Leading a change effort requires a strong sponsor and/or champion for the change. Change can be led by one person or a group of people who are passionate, visible, and committed to the effort. Leading change requires clearly identifying the need for change, creating a vision, gaining support or commitment, and keeping the momentum going (Berns et al., 2007).

It was clearly stated in the Project Charter dated 27 November 2007 that was signed between SILNAM and GIPF that the Chief Information Officer acted as the executive champion and the project sponsor. The team stated the Chief Information Officer was very committed to the project and was the main driving force. That he had the confidence in the system and this really helped others to also have confidence in the system.

The Executive Sponsor was perceived as active and visible throughout the ERP project, which the literature has confirmed is considered a key driver for successful projects.

Change Strategy

Lientz and Rea (cited in Calvert, 2006) argued a change strategy is a formal plan that details the organisational elements that will be affected by the change (people, processes, organisational structures, policies, technology infrastructure, reward systems, facilities and location of the work, and corporate culture), and the tactics for introducing that change. According to Dyson et al. (1997) implementation of new technology is most effective when a systematic change management plan is adopted.

The Change Strategy of the ERP implementation was outlined in the 2007 Project Charter. The charter gave a framework for the following:

- The Project Scope
- Project Scope Exclusion
- Implementation Deliverables
- The Project Team Organisation
- The Project Plan
- Project Acceptance Criteria
- List of Task and Deliverables
- Project Approach and Methodology
- Communication Strategy
- Risk Mitigation Strategy

Effective Change Team

In many cases it wasn't explicit whether change agents were an integral part of that implementation team, according to Calvert (2006).

There is no evidence from the responses from the project team that an effective change team formed part of the ERP implementation. The review of project documents furthermore does not give any indication that a change team formed part of the ERP Implementation. The team acknowledged that there was a lack of change control experts, that there were no change control experts on board at that time

Project Plan and Vision

There is a need to define the corporate mission, objectives, strategy and use cross-functional teams and executive-level input to identify, examine, and rethink existing business processes. This helps to ensure the necessary buy-in of both executive management and the process owners. Clearly define why the ERP system is to be implemented (Umble, Haft, & Umble, 2003).

The literature has frequently mentioned clear vision, project objectives and project mission as critical factors for successful ERP implementation projects. Therefore, project requirements, objectives, setting a clear vision, and a comprehensive project plan should be developed to fit within organisation goals to ensure the success of an ERP implementation (Rabaa, 2005).

The project plan provides guidance throughout the implementation process and allows the project team to keep focused on the project goals and objectives. Thus, project requirements provide a clear view to what needs to be done during the project, and the project plan provides detailed steps on what needs to be accomplished in the project (Grabski and Leech, 2007).

The project vision according to the team was to resolve all problems that they were experienced with the existing system. That the organization wanted a system that would generate reports and accurate information when needed, to take the organization into the 21st century.

It was evidently important that they moved away from the manual way of doing things and that the system should ease their day-to-day operations. The team stated that the system would reduce their workload and help the organisation to bring efficiency within the fund and to solve all integration problems.

Change Readiness Evaluation

Calvert (cited in Al-Mudimigh & Alballa, 2011) noted that testing for organisational readiness for change is just as important as analysing technical feasibility. Both the readiness for change and the capabilities for making that change must be present for successful ERP implementation.

Similarly, Benjamin and Levinson (1993) affirmed that testing for organisational readiness for change is just as important as analysing technical feasibility; because support from a critical mass of end-users is needed to ensure effective change. Both the readiness for change and the capabilities for making that change must be present for successful implementation (cited in Bancroft et al., 1998).

Kalbasi (2007) summarised the key factors for internal readiness:

1. Organisation and people should be ready for changes.
2. Users should be involved in design and implementation of business processes.
3. Education should be a priority from the beginning of the project, and money and time should be spent on various forms of education and training.
4. Training, re-skilling and professional development of the IT workforce is critical.

It was evident from the feedback from the participants that there was not really a readiness assessment done and that there were still some users reluctant in the beginning of the project, but after some time eventually understood and bought into the need for change. One team member indicated that it was the responsibility of the team leaders (Finance, HR, IS) to make sure that they had the right people (resources) in place and that they had to make sure that their teams were well-prepared.

Proper Management Support

Otieno (2010) claimed that with strong support from top management, necessary resources can be mobilised and a project put on top priority by altering the political agenda. Top priority encouraged an entire organisation to focus on the ERP implementation and motivate users to learn the new system and truly appreciate a project.

According to Otieno (2010) no matter if it was in the public, or the private organisation, top management support seemed to be one of the essential issues to ensure the ERP projects to be successful, in terms of designing and controlling the whole implementing process. In addition, the attendance of the top management during the

ERP implementation could also strength the employees' confidence in the whole project ERP (Otieno, 2010).

There was a consensus among the team members that there was adequate buy-in and support from the management, which had a direct influence to delivering the project successfully. The support started even from the Top layer of Board and EXCO. Although one of the HR team members specified that she felt that the GM could have been more supportive. The GM was mostly absent during the implementation and post-implementation stages.

The Training Programme

According to Ho et al (cited in Calvert, 2006) a common strategy for ERP training is to train super-users from each functional area early in the project lifecycle. Super-users then return to their various departments and mentor other users. Super-users, therefore, are important in facilitating knowledge diffusion and fostering acceptance of changed work practices.

Training that is available through the consultants is a valuable resource which contributes to expanding skills and increasing knowledge that are lacking in-house, resulting in enabling users to utilize an ERP system. When ERP users achieve appreciable knowledge of an ERP system and use an ERP system properly, they are likely to be able to appreciate the overall quality of the system and understand its capabilities. This can positively influence their satisfaction regarding ERP implementation (Soltani, Elkhani, & Bakri, 2013).

The training according to some of the team members was mainly based on the different modules. An overview was given of the module and then the user had to come back and try to implement what they have learnt.

This approach was identified in the Project Charter as training-of-trainer (ToT) approach. It was a strategy for internal capacity building so that the core team will become familiar with the operations of each module as per the organisations business processes. The team also indicated that there was a lot of knowledge sharing in terms of technical expertise. It was per agreement the responsibility of the consultant to also train the IS department team members on the technical aspects of the system. This included all interfaces, reports and any other customisation that was to be done.

Incentives Given

Providing incentives and/or disincentives to help employees overcome resistance to change is a positive move. Not only should incentives be offered to help staff overcome resistance to change, incentives also help to retain key implementation staff.

An incentive can be a higher pay to those assigned to higher-level, skilled jobs or offering revised titles. Or, an overtime pay to cover the extra work during the changeover phase. Other types of incentives could include cash awards, letters of merit, and certificates of recognition (Alballaa & Al-Mudimigh, 2011).

Skok and Legge (cited in Calvert, 2006) stated that not only should incentives be offered to help staff overcome resistance to change, incentives also help to retain key implementation staff. A major problem associated with large IS projects, such as ERP implementations, is the acquisition and retention of highly skilled staff. Monetary rewards like bonuses and share options, as well as non-monetary rewards such as recognition and career development can facilitate the retention of key staff and shore up project continuity (Skok and Legge, 2002).

When research participants were asked about the incentives given to the team, they specified that there were no monetary or non-monetary incentives given to anyone.

Communication Programme

According to Bhatti (cited in Kronbichler et al., 2009) sharing information between the project team and communicating the results and the defined goals to the rest of the organisation in each project stage is very important too.

The communication plan has to detail several areas including the rationale for the ERP implementation, details of the business process management change, demonstration of applicable software modules, briefings of change management strategies and tactics, and establishment of contact points (Sternad & Samo, 2006).

Communication is a key component in the success of any change initiative. The general message is communicate early, clearly, often, and through all levels of the organisation. The goals for effective communication are to increase the organisation's understanding and commitment, reduce confusion, and prepare staff for the impact of change (Berns et al., 2007).

The team members noted that there was no formal communication programme. Most of the communication took place through regular meetings that were scheduled. The team leaders with the project steering committee met monthly to discuss and review the status of the project. The core team had to meet weekly to discuss and provide status on the project. One member mentioned that there were also regular mails circulated to keep members informed and to provide details for issues that needed to be resolved.

Although the team members specified that there was no formal communication programme, the Project Charter clearly outlined the communication strategy that corresponded with the feedback from the team.

According to the Project Charter dated November 2007:

Project Communication

It is stated in the Project Charter that any process of information distribution and sharing which has direct relation with the project will be termed as project communication. This means all e-mails, memos, review comments and document distribution will be covered under the boundaries of project communication, arising from:

- Formal meetings
- Deliverables from the project team
- Information distribution within the Project Team

Modes of Communication

- E-mail: E-mail will be used for most of the project-related communication and it is an official medium of communication.
- Project Documents: Project Review Report, Requirements Analysis documents and other Project documents will be used for specific information needs.
- Formal Meetings: Review Meetings, Working Group Meetings, and Steering Group Meetings.
- Telephone: Telephone also will be used as a mode of communication.
- Conference Calls: Conference call facility would be used on a need basis. Conference calls would also be used for interaction between SILNAM onsite and off-shore teams.

As a guideline, E-mail was to be used as a formal mode of communication between various parties involved in the project. The use of telephones, printed documents were to be restricted to only where it was absolutely necessary.

According to the responses from the team they did communicate, everything was shared, progress and status was evaluated during meetings and there was regular communication by mail between team members and the business. This was all done according to the project Charter.

Stakeholder Involvement:

According to Vilpola (2008) ERP Implementation stakeholders were those who facilitate the change, put the implementation into practise, and eventually either directly use the system or indirectly use the results of the use of the system.

Cleland & Ireland (cited in Zeng, 2010) claimed that successful fulfilment of project deliverables was critically dependent on the involvement and support of project stakeholders. Different stakeholders, external or internal, often have different or

sometimes conflicting requirements and expectations. Ignoring their influence is likely to be detrimental to project success. The need to achieve project objectives that fully address stakeholder expectations throughout the project lifecycle has been stressed in previous studies. With regard to ERP projects, stakeholders not only include those participants in the implementation processes, but also include the stakeholders in the projects carried out by the organization during and after the implementation. It is these projects that bring profits to the firm and make the ERP adoption worthwhile (Yahun Zeng, 2010).

It was clear from the feedback from the interviews that the relevant stakeholders were involved in the ERP implementation. The end-users who would eventually use the system, the IS department that will support the system were involved throughout the ERP implementation. The stakeholders or process owner were involved, each process or each function had to be approved and signed off and tested by the person who is actually affected by this change.

Post-Implementation Activities

Calvert (2006) stated in an ERP environment, routinisation occurs when the innovation is no longer perceived as something new and its use becomes part of normal activities; while infusion refers to the ERP being used to its fullest potential. Post-implementation activities, such as mentoring by super-users, training, help-desk support, end-user documentation, newsletters about ERP advanced features and functions, online help, etc., are instrumental in facilitating the routinisation and infusion processes of IT diffusion. Lientz and Rea (cited by Calvert, 2006) observed that intentional deterioration occurs when employees, attempting to bring the system back to its old state, institute changes. Robey et al (cited by Calvert, 2006) outlined how some users learn to work-around ERP requirements by devising improvised practices and reinventions of the technology.

The team stated that most of the post-implementation activities were done by on-site support by the consultant, refresher training to the users and a help-desk where all issues were logged that the users experienced.

5.3 Summary

The chapter provided an interpretation of the data that was presented in Chapter four. The results from the findings were discussed with the different literature models that were presented in Chapter 2. The discussion was based on the main themes, the change

process, the critical success factors and change management strategies. The next chapter concludes the main points of the research and provides recommendations that are of importance.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter reiterates the main findings reached in the previous results chapter through a synopsis that was prepared as an internal review by Ernst & Young in 2012. The research then revisits the objectives that the study planned to achieve initially and then draw some salient points from the literature that was reviewed, and the implications for the strategies and policies are indicated. It then concludes with brief recommendations.

6.2 Discussion of Objectives

The study sets out to achieve three objectives through searching for change management theories that can help explain what GIPF experienced in its ERP implementation. It also explores those factors that helped to contribute towards the success of the implementation efforts and it followed efforts made by people to succeed with the ERP system. Now let us revisit the sub-objectives at set out at the beginning of the study:

Objective (1): To identify the change management theories that can help explain ERP implementation;

Objective (2): To uncover the critical success factors that facilitates the implementation of the ERP system;

Objective (3): To trace important mechanisms leading towards how ERP systems can be implemented effectively.

It is clear from the review under taken three years after implementation that out of just over 200 features that were available on the Oracle business suite that was installed, 68% (140/205) requirements were in actively use. About 16% (33/205) were available but not used by GIPF staff, while there were 5% (9/205) features needed but not the system could not provide those. However, most features were in use as best illustrated in figures 6.1 and 6.2 below on the next page.

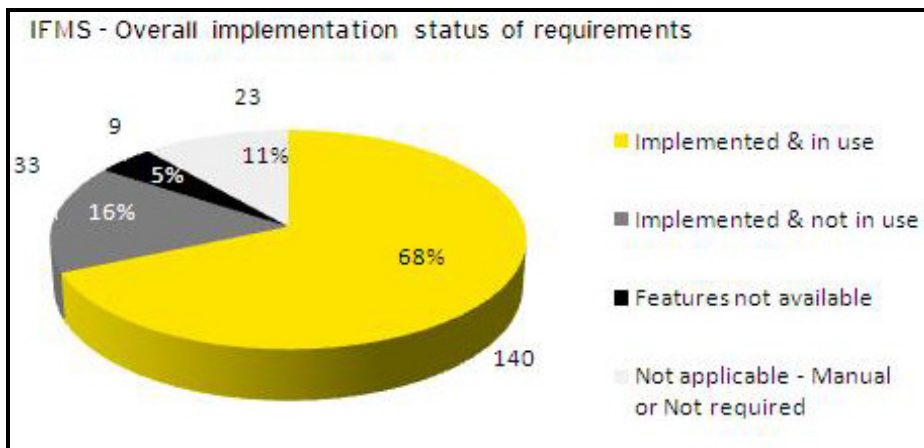


Fig 6.1. Adopted IFMIS Overall Implementation Ernst and Young (2012)

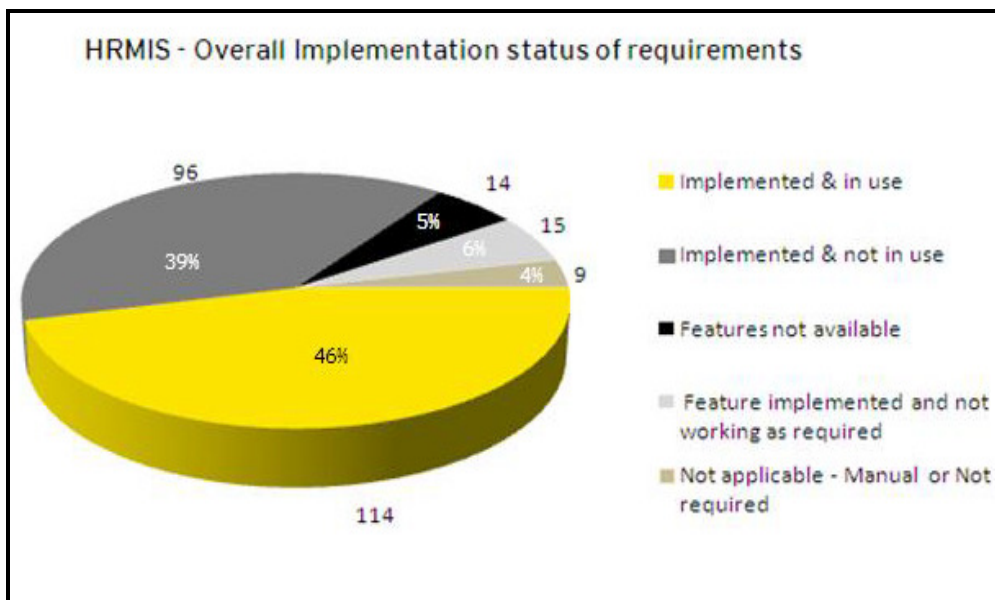


Fig 6.2. Adopted HRMIS Overall Implementation Ernst and Young (2012)

6.3. Key Findings of the Post –Implementation as reflected by Ernst & Young dated March 2012.

- 1) Insufficient awareness of / familiarity with features available in the system, resulting in IFMS and HRMIS not being used in an optimal manner;
- 2) Impossibility to export reports available in the system into spreadsheet (Excel) format for further analysis. According to users, this results in significant time being spent in building spreadsheet reports from scratch (e.g. by manually re-inputting information maintained in the system into Excel);
- 3) The requirements formulated by GIPF at the start of the IFMS and HRMIS projects took into consideration the possibilities offered by the system. We under-

stand that although the system has been implemented and set-up as per these requirements, the actual working practices have not been amended to align with the actual system work flows; and

4) Users do not systematically raise system related issues encountered or their required system changes to the GIPF IT team, so that appropriate action (such as update of system configuration to align to changes in management guidelines impacting system behaviour) may be taken. Instead, they tend to make use of manual workarounds which are time consuming and more prone to errors.

Findings from the post implementation review and the feedback from the ERP implementation team clearly support each other. The studies indicate that there were change management strategies and critical success factors that were not efficiently managed throughout the implementation. It is also evident from the post-implementation review and feedback from the team that some were considered or efficiently managed.

The team indicated that there were no formal BPR done, the findings from the post-implementation review specified that “the requirements formulated by GIPF at the start of the IFMS and HRMIS projects took into consideration the possibilities offered by the system. We understand that although the system has been implemented and set-up as per these requirements, the actual working practices have not been amended to align with the actual system work flows”.

Feedback from the team had indicated that there was training conducted during the implementation and even as a post-implementation activity. According to them most of the training were on business processes of the organisation and technical training for the IS team. The findings from Ernst and Young that conducted the post-implementation review stated that there was insufficient awareness of / familiarity with features available in the system, resulting in IFMS and HRMIS not being used in an optimal manner.

Results from post-implementation review indicated that users do not raise issues at help-desk and that the users instead made use of manual workarounds. Post-implementation activities that were highlighted by the team were help-desk, training and user support that was provided by the consultant. This activity was not properly managed by the organisation, because users should not revert back to old ways of doing things. According to Lewin’s three step theory at this the last step is to freeze the new status quo. The organisation should be institutionalising the new way of doing and processing “things” transactions. If the new change is not institutionalized, the employees would revert back to the old way of doing things.

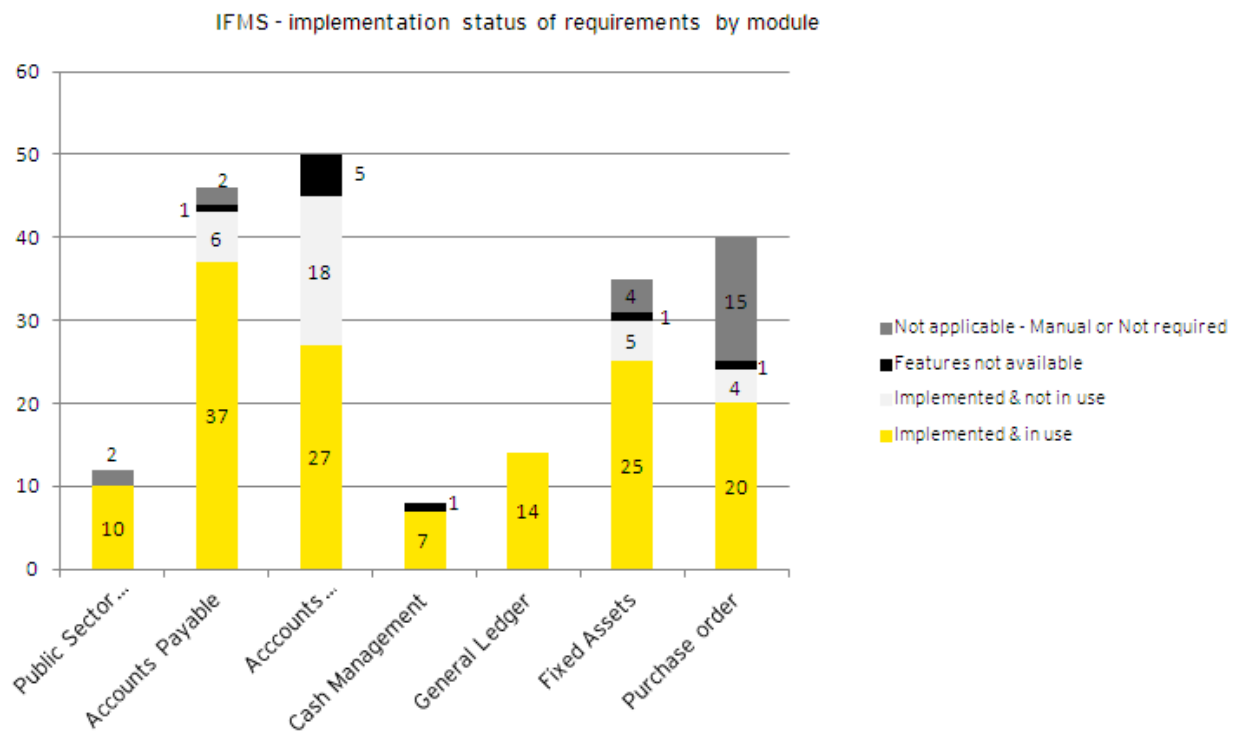


Fig 6.4 A representation of the implementation status of business requirements per module within each system. Ernst & Young (2012)

One of the issues that the team members identified was that some of the stakeholders were not really involved during the implementation. The stakeholders that were the personal assistants that captured requisitions. If one looked at the findings on the purchase order module it would be clear that some features were implemented and not in use and for others a percentage was not applicable. All requirements from all stakeholders were not taken into consideration there was a large percentage that is not applicable.

The other module from the stakeholders of the finance department was the Accounts Receivable Module. This module that supports one of the core functions in GIPF also indicates that there is a high percentage that was implemented but not in use.

“from finance there was also representatives it's just that there's some key components in Finance that were also not really involved in the implementation team” (RP6).

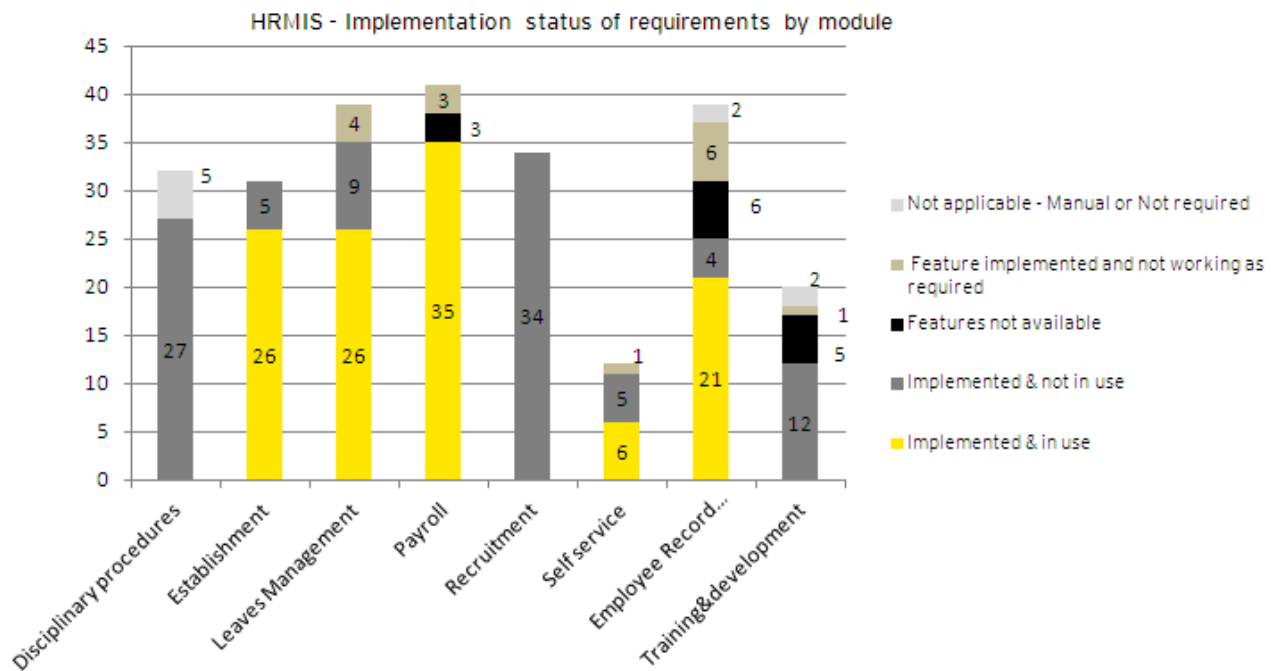


Fig 6.4 A graphical representation of the implementation status of business requirements per module within each system Ernst & Young (2012)

Most of the modules in the HRMIS has been implemented and not in use. One of the facts that the team pointed out was that although there was a project leader appointed to lead the HR team, most of the members did not really have respect for the leader. At that point in time there was no manager in the department except for the General Manager, the only other option at that time was to appoint the highest grade.

As per the findings from the HRMIS side there were no proper change management strategies applied. The key factors that were lacking were project management, proper training and proper leadership. One of the team members specified that there was not much support from the General Manager within the department. Top management support was a crucial activity in ERP implementation.

Discussion Objective 3

To trace important mechanisms leading towards how ERP systems can be implemented effectively.

Pre-Implementation Activities/Unfreeze

- 1) The organisation should evaluate its readiness to change, as both readiness for change and the capabilities for change should be present for a successful implementation.
- 2) Top Management should define the vision and the change plan. It should be clearly defined why an ERP system should be implemented. The vision and the plan should cover the vision and the objectives to monitor the progress of the ERP implementation.
- 3) Communicate the vision and the plan to all key stakeholders. The stakeholders need to know the vision, why the system is needed and the benefits of the ERP implementation.
- 4) Allocate adequate resources for implementation. This should include additional staffing, additional funding, training in both change management and project management, administrative support, technical support, change management support, project management support, and communication tools. Encourage a positive change culture; make sure that all employees are positive towards the implementation. A positive change culture creates a positive environment for change and reduces the resistance from users. Effective project management should already be present at this stage. Resources should be allocated adequately and progress should be monitored. The project plan should be communicated to all stakeholders by the project manager. The project manager should be committed to the project in order to gain commitment from other member.
- 5) The executive champion and project sponsor should be identified; the champion and project sponsor should have strong leadership skills to provide direction during the implementation and to keep the momentum going.8). Identify the key resources that will form part of the project implementation team. This includes both members of the ERP and change team. The team should possess the necessary skills and knowledge to implement the ERP system. The team should have the best and

brightest members of the organisation. It is also very important to make sure that the consultant's team have the necessary skills and knowledge.

6) Develop a proper change strategy, the change strategy should include all strategies that is critical to the implementation.

7) Compile a detailed change programme of how the organisation will manage the resisting forces.

8) Top Management support is very crucial not only in this stage but during each stage of the project, management commitment was identified as a crucial change management strategy and also as a critical success factor in the literature reviewed.

9) Training at this stage is also important; it reduces the resistance from users. Employees will be less resistant if they understand the change process. They can start visualizing on how the future system will improve the day to day operations of the organisation.

10) Assess the computer culture of the organisation. You need to determine if the users possess the necessary computer skills to implement the ERP system and also if they have the skills to operate the system.

11) Evaluate the Legacy systems in the organisation. This is important because you need to determine what policy and procedures, technology and culture are critical to preserve.

Implementation / Move

1) Business Process Engineering will assist the organisation to implement the system with minimum customizations. It will limit the time spend on the implementation and also in the long run reduce maintenance fees and make future upgrades easier.

2) Software development, testing and troubleshooting is very important; it reduces the risk on the system at a later stage. This can also be a learning experience for team members because it helps them to learn and adapt to the new system more easily.

3) Monitoring and Evaluation, the performance of the ERP system can be reviewed and evaluated to see whether it is achieving business goals and objectives

4) Incentives, celebrate key milestones, it will assist the organisation in the acquiring and retention of highly skilled staff. The organisation will be able to reduce operational expenditure by reducing the time and money spent on training for the users to get to know the system. Maintenance cost will also reduce due to competent staff in-house.

5) *Positive Change Culture*

- 6) *Executive Champion*
- 7) *Project Management, monitor and evaluate*
- 8) *Top Management Support*
- 9) *Communication*
- 10) Training should include the technical training for members of the IS department, business process and system functionality for users

Post-Implementation/Freeze

- 1) Post Implementation Activities is very important after the implementation. If the organisation neglects post-implementation activities at this stage, the users might go back to a manual way of doing things. The organisation might revert back to old way of doing things.
- 2) *Software development, testing and troubleshooting*
- 3) *Monitoring and Evaluation*
- 4) *Incentives, celebrate key milestones*
- 5) *Positive Change Culture*
- 6) *Executive Champion*
- 7) *Project Management, monitor and evaluate*
- 8) *Top Management Support*
- 9) *Communication*
- 10) *Training*

Calvert (2006) suggested that the central idea in the model is that the ten different change-management factors can all help motivate individual employees to learn and use the new ERP system. Motivated employees will make the effort to become effective users. Clearly, other factors such as each employee's prior knowledge of computing, capacity to learn, access to learning materials are also important determinants of individual capacity to use an ERP system effectively.

Holland and Light (1999) defined critical success factors for ERP implementation as, "factors needed to ensure a successful ERP project.

To ensure that an ERP system is implemented successfully/effectively both Change Management Strategies and CSF should be taken into consideration. Key factors like software development, testing and troubleshooting, monitoring and evaluation and business process engineering that is critical to the success of the implementation. These factors are not clearly mentioned in the Change Management strategies but should be considered.

6.3 Limitations

The limitation is a single case study that is based on the implementation that was done at GIPF and that the study does not represent a wider social setting and therefore the results of the research cannot be used to make generalisations to the total population. The study is limited to GIPF.

However, although the results obtained in the study may not be generalised considering the sample, however, the results will provide valuable insights to the managers within GIPF that is associated with the ERP implementations.

The research was performed two years after the ERP system was rolled out. The team's recollection of the ERP implementation might have changed over time. Assessing the implementation early into the implementation would be a better indicator of the effectiveness of the change management process followed.

6.4 Recommendations

A decision was taken by the IS department to upgrade the Oracle E-Business Suite to the latest release 12.1.6. The researcher would recommend that this should be treated as a new change project and that the model that incorporates both change management strategies and CSF should be taken into consideration. The team should specifically focus on the following key activities that were neglected during the previous implementation:

1. Proper training: training should not only be provided on the business processes. Training should be provided on all functionalities of the system.
2. The organization should do a proper BPR, the current business processes should be mapped to the system business process.
3. The organization should implement a proper help desk system. It should be quick and easy to raise issues. Issues should be addressed immediately.
4. Top management support is always important in any project implementation. Management should be involved throughout the process, to encourage other users.
5. One of the key issues that the organization needs to address is to determine the organization culture. No project would be implemented successfully if the organizational culture is not open to change. Management should evaluate the culture and implement strategies that will make the organization positive and open to change.

6. An organisation readiness assessment should be done. The organisation should assess if they have the resources to implement the project and assess if there is any resistance. It is important to address the issues at the beginning of a project. Deferred resistance has a greater impact on a project, when resistance is detected only at a later stage it might be too late to salvage the project.

6.5 Recommendation for further studies

The study was based on a single case study on the ERP implementation that was done at GIPF. Case studies of this nature are sparse on the continent. The current literature for developing countries does not have a lot of literature that could contribute to the theoretical framework for ERP implementations.

The researcher would recommend that further studies should be done on ERP implementation in developing countries which other institutions can use as a framework when implementing or upgrading ERP systems. The findings can also assist institutions to benchmark themselves better.

6.6 Final Remarks

The researcher while doing the thesis could not find any models or frameworks on change management strategies in ERP implementation in developing countries. The researcher hopes that the study will encourage other future students and researchers of change management and ERP implementations to help contribute to this field towards knowledge contribution.

REFERENCES

- Aarabi, M., Zameri, M., Saman, M., Wong, K. Y., Beheshti, H. M., & Za-, N. (2011). Critical Success Factors of Enterprise Resource Planning Implementation in Small and Medium Enterprises in Developing Countries : a Review and Research Direction.
- Abdolvand, N., Albadvi, A., & Ferdowsi, Z. (2008). Assessing readiness for business process reengineering. *Business Process Management Journal*, 14(4), 497–511. doi:10.1108/14637150810888046
- Addo-Tenkorang, R., & Helo, P. (2011). Enterprise Resource Planning (ERP): A Review Literature Report, II.
- Ahmed, Z. U., Zbib, I., Arokiasamy, S., Ramayah, T., & Chiun, L. M. (2006) Resistance to Change and ERP Implementation success: The Moderating Roles of Change Management Initiatives., 11(2), 1–17.
- Aladwani, A. M. (2001). Change management strategies for successful ERP implementation. *Business Process Management Journal*, 7(3), 266–275. doi:10.1108/14637150110392764
- Al-Alawi, A. I., Al-Marzooqi, N. Y., & Mohammed, Y. F. (2007). Organizational culture and knowledge sharing: critical success factors. *Journal of Knowledge Management*, 11(2), 22–42. doi:10.1108/13673270710738898
- Alballaa, H., & Al-mudimigh, A. S. (2011). Change Management Strategies for Effective Enterprise Resource Planning Systems : A Case Study of a Saudi Company, 17(2), 14–19.
- Al-Mashri, M. (2001). Process Orientation through Enterprise Resources Planning (ERP): a review of critical issues. *Journal of Knowledge and Process Management*.
- Al-nafjan, A. N. (2011). The impact of Change Management in ERP System: A Case Study of Madar.
- Al-shamaln, H. M., & Al-mudimigh, A. S. (2011). The Change Management Strategies and Processes for Successful ERP Implementation : A Case Study of Madar, 5, 431–435.
- Astley, W. G., & Ven, A. H. (2011). Central Perspectives and Debates in Organization Theory and, 28(2), 245–273.
- Bancroft, N., Seip, H., A., & Sprengel. (1998). Implementing SAP R/3: How to introduce a Large System into a Large organisation.
- Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology : Study Design and Implementation for Novice Researchers, 13(4), 544–559.

- Benbasat, B. I. (1987). The Case Research Strategy in Studies of Information Systems Case Research : Definition, (September).
- Benjamin, R., & Levinson, E. (1993). A framework for managing IT-Enabled change. *Sloan Management Review*, 34(4).
- Berns, K. A., Charboneau, D., & Foth, C. J. (2007). Directing Change Management at the University of Minnesota.
- Bhatti, T. R. (2005). Critical Success Factors for the Implementation of Enterprise Resource Planning (ERP): Empirical Validation, 1–10.
- Bingi, P.; Sharma, M.K.; Godla, J. (1999): Critical Issues Affecting an ERP Implementation, *Information Systems Management*, 16(3), 7-14.
- Boeije, H. R. (2009). Research Design, 19–42.
- Burns, B. (2009). *Managing Change* (5th ed.). Pearson Education Limited.
- BusinessDictionary.com. (2010). Retrieved January 22, 2014, from <http://www.businessdictionary.com/definition/critical-success-factors-CSF.html>
- Calvert, C. (2006). A Change-Management Model for the Implementation and Upgrade of ERP Systems.
- Carali, R. A. (2004). The Critical Success Factor Method : Establishing a Foundation for Enterprise Security Management, (July).
- Carpenter, M., Bauer, T., & Erdogan, B. (2010). *Principles of Management*.
- Change Management Leadership Guide. (2011).
- Coldwell, D and Herbst, F, 2004 Business Research. Cape Town: Juta and Co. Ltd Publications
- Creasey, T. (2009). Defining change management to project management and organizational change, 1–7.
- Daft, R., & Lewin, A. (1993). Where are the theories for the “New” Organizational forms? An Editorial Essay. *Organization Science*, 4(4),
- Dantes, G. R. (2011). Enterprise Resource Planning Implementation framework based on Key Success Factors (KSFs).
- De Sousa, J. M. E. (2004). Definition and Analysis of Critical Success Factors for ERP Implementation Projects.
- Dezdar, S., & Ainin, S. (2011). The influence of organizational factors on successful ERP implementation. *Management Decision*, 49(6), 911–926.
doi:10.1108/00251741111143603

- Dittrich, Y. (2009). ERP implementation as design, *21*(2), 27–58.
- Draper, J. (2004). *The relationship between research question and research design Book Chapter*.
- Ekane, N. S., & Khan, M. S. (2009). ERP Implementation : Critical Success factors with focus on change management, (June).
- Ernst & Young. (2012). *IFMS & HRMS Post Implementation Review*.
- Fang, L., & Patrecia, S. (2005). Critical Success Factors in ERP Implementation.
- Finney, S., & Corbett, M. (2007a). ERP implementation: a compilation and analysis of critical success factors. *Business Process Management Journal*, *13*(3), 329–347. doi:10.1108/14637150710752272
- Finney, S., & Corbett, M. (2007b). ERP implementation: a compilation and analysis of critical success factors. *Business Process Management Journal*, *13*(3), 329–347. doi:10.1108/14637150710752272
- Françoise, O., Bourgault, M., & Pellerin, R. (2009). ERP implementation through critical success factors' management. *Business Process Management Journal*, *15*(3), 371–394. doi:10.1108/14637150910960620
- GIPF IFMIS HRMIS - Project Agreement*. (2008).
- GIPF IFMS-HRMS Risk Analysis - PSCM - 27JUN2008*. (2008).
- Grabski, S. V, Leech, S., & Lu, B. (2001). Risks and Controls in the Implementation of ERP Systems, *1*(1), 47–68.
- Guler, S. (2010). A Case Study of SAP Implementation in a Major Company.
- Hagan, D. (2003). Ethnography: A Qualitative Research Methodology, 1–10.
- Haines, M. (2009). Understanding enterprise system customization: An exploration of implementation realities and the key influence factors. *Information Systems Management*, *26*(2), 182-198.
- Hallikainen, P., Kivijärvi, H., & Tuominen, M. (2009). Supporting the module sequencing decision in the ERP implementation process—An application of the ANP method. *International Journal of Production Economics*, *119*(2), 259–270. doi:10.1016/j.ijpe.2009.03.008
- Hancock, B. (2002). Trent Focus for Development in Primary Health Care An Introduction to Qualitative Research An Introduction to Qualitative.
- Hanning, L. E. (2010). The role of Change Management in successfully implementing a Retail Enterprise Resource Planning Solution.

- Hatch, J. A. (2002) *Doing qualitative research in education settings*. Albany: SUNY Press.
- Haug, A., Pedersen, S. G., & Arlbjørn, J. S. (2011). IT readiness in small and medium-sized enterprises. *Industrial Management & Data Systems*, 111(4), 490–508. doi:10.1108/02635571111133515
- Hawking, P., Stein, A., Paulhawkingvueduau, E., & Foster, S. (2004). Change Management : The Real Struggle for ERP Systems Practices.
- Holland, C. P., & Light, B. (1999). A Critical Success Factors Model For Enterprise Resource Planning Implementation Critical Success Factors For ERP Implementation.
- Hornstein, H. (2008). Title : The Integration of a Change Management Approach with IT implementations should not be an afterthought or add-on, (June).
- Howe, D. (2010). The Free On-line Dictionary of Computing. Retrieved January 22, 2014, from [http://dictionary.reference.com/browse/enterprise resource planning](http://dictionary.reference.com/browse/enterprise_resource_planning)
- Huang, Z., & Palvia, P. (2001). ERP implementation issues in advanced and developing countries, 7(3).
- Ibrahim, A. M. S. (2008). A framework for the Implementation of ERP to Improve Business Performance : A Case Study, 2008.
- Jain, V. (2010). What makes ERP systems to deliver: Impact of Post-Implementation Capabilities on ERP value.
- Jha, V. S., Delhi, N., & Joshi, H. (2007). Relevance of Total Quality Management (TQM) or Business Excellence Strategy Implementation for Enterprise Resource Planning (ERP) – A Conceptual Study.
- Kalbasi, H. (2007). Assessing ERP Implementation Critical Success Factors.
- Kemp, M. J., & Low, G. C. (2008). ERP innovation implementation model incorporating change management. *Business Process Management Journal*, 14(2), 228–242. doi:10.1108/14637150810864952
- Kong, J. H. (2005). ERP Implementation Planning: A Critical Success Factor (CSF) Approach. *ERP Implementation Planning: Critical Success Facts (CSFs) Approach*. Retrieved from http://heinonlinebackup.com/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/mnlr91§ion=19
- Kronbichler, S. A., Ostermann, H., & Staudinger, R. (2009). A Review of Critical Success Factors for ERP-Projects, 14–25.
- Kronbichler, S., Ostermann, H., & Staudinger, R. (2010). A Comparison of Erp-Success Measurement Approaches. *JISTEM Journal of Information Systems and Technology Management*, 7(2), 281–310. doi:10.4301/S1807-17752010000200003

- Kwahk, K.-Y., & Lee, J.-N. (2008). The role of readiness for change in ERP implementation: Theoretical bases and empirical validation. *Information & Management*, 45(7), 474–481. doi:10.1016/j.im.2008.07.002
- Mac, E., Akkermans, H., & Helden, K. Van. (2002). Vicious and virtuous cycles in ERP implementation : a case study of interrelations between critical success factors.
- McAdam, R., & Galloway, A. (2005). Enterprise resource planning and organisational innovation: a management perspective. *Industrial Management & Data Systems*, 105(3), 280–290. doi:10.1108/02635570510590110
- Mack, N., Woodson, C., MacQueen, K., Guest, G., & Namey, E. (2005). *Qualitative Research Methods: A Data Collectors Field Guide*.
- Macredie, R. D., Sandom, C., & Paul, R. J. (1991). Modelling for Change : An Information Systems Perspective on Change Management Models, (1994).
- Maditinos, D., Chatzoudes, D., & Tsairidis, C. (2012). Factors affecting ERP system implementation effectiveness. *Journal of Enterprise Information Management*, 25(1), 60–78. doi:10.1108/17410391211192161
- Maguire, S., & Redman, T. (2007). The role of human resource management in information systems development. *Management Decision*, 45(2), 252–264. doi:10.1108/00251740710727278
- Maxwell, J. A. (2008). Designing a Qualitative Study, 214–253.
- McCarthy, C. (2010). Change Management Strategies for an Effective EMR Implementation.
- Mendel, B. (1999). Overcoming ERP Project hurdles. *Infoworld*, 21(29), 87.
- Mintzberg, H. (2009). Patterns in Strategy Formation, 24(9), 934–948.
- Mishra, A., & Mishra, D. (2011). ERP Project Implementation : Evidence from the Oil and Gas Sector, 8(4), 55–74.
- Moohebat, M. R. (2010). A Comparative Study of Critical Success Factors (CSFs) in Implementation of ERP in Developed and Developing Countries, 2(5), 99–110. doi:10.4156/ijact.vol2.
- Myers, M. D. (1997). Qualitative Research in Information Systems, (June).
- Nah, F. F. (2001). Critical Success Factors for Enterprise Resource Planning Implementation and Upgrade National Instruments, (29).
- Nah, F. F.-H., Lau, J. L.-S., & Kuang, J. (2001). Critical factors for successful implementation of enterprise systems. *Business Process Management Journal*, 7(3), 285–296. doi:10.1108/14637150110392782

- Ngai, E. W. T., Law, C. C. H., & Wat, F. K. T. (2008). Examining the critical success factors in the adoption of enterprise resource planning. *Computers in Industry*, 59(6), 548–564. doi:10.1016/j.compind.2007.12.001
- Ojiako, U., & Maguire, S. (2008). Success criteria for systems led transformation: Managerial implications for global operations management. *Industrial Management & Data Systems*, 108(7), 887–908. doi:10.1108/02635570810897982
- Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in Qualitative Research, (1994), 1994–1997.
- Oseni, E. (2007). Change Management in Process Change.
- Otieno, J. O. (2010). Enterprise Resource Planning Systems Implementation and Upgrade, (April).
- Padachi, D. (2007). *GIPF Project Charter*.
- Pataki, G. E., Dillon, J. T., & McCormack, M. (2003). *Project Management Guidebook* (pp. 177–192). New York State Office for Technology.
- Productivity Commission. (2013). On efficiency and effectiveness : some definitions, (May).
- Project Management Institute. (2013). *Managing Change in Organizations: A Practice Guide*. (PMI Publications, Ed.). Project Management Institute.
- Rabaa, A. A. (2005). Identifying Critical Success Factors of ERP Systems at the Higher Education Sector.
- Richards, H. (2002). Ethical Issues in Qualitative Research, 51–67.
- Ritchie, J., & Lewis, J. (2003). Qualitative Research Practice.
- Roman, K. (2009). Benefits of Implementing an ERP Top 10 Benefits an ERP Implementation Can Bring to Your Institution, 1–3.
- Rouse, M. (2005). WhatIs.com. Retrieved January 22, 2014, from <http://whatis.techtarget.com/definition/end-user>
- Saunders, M. Lewis, P. Thornhill, A.2007. *Research Methods for Business Students*, 4th edition. Prentice Hall.
- Sekaran, U., & Bougie, R. (2009). *Research Methods for Business - A Skill Building Approach* (5th ed.). John Wiley & Sons.
- Self, D. R., & Schraeder, M. (2009). Enhancing the success of organizational change: Matching readiness strategies with sources of resistance. *Leadership & Organization Development Journal*, 30(2), 167–182. doi:10.1108/01437730910935765

- Shah, S. I. H. (2011). Exploring the Impediments of Successful ERP Implementation : A Case Study in a Public Organization, 2(22), 289–296.
- Shehab, E. M., Sharp, M.W., Supramaniam, T.A., & Spedding, T. A. (2004) Enterprise resource planning: an integrative review . *Business Process Management Journal* 10(4).
- Shel, N. (2009). Master Thesis in IT Management Enterprise Resource Planning ERP Implementation : Critical Success factors, (June).
- Smith, I. (2005). Achieving readiness for organisational change. *Library Management*, 26(6/7), 408–412. doi:10.1108/01435120510623764
- Soja, P. (2006). Success factors in ERP systems implementations: lessons from practice. *Journal of Enterprise Information Management*, 19(6), 646–661. doi:10.1108/17410390610708517
- Sternad, S., & Samo, B. (2006). Factors which have fatal influence on ERP. *Journal of Information and Organizational Sciences*, 279–293.
- Sumner, M. (1999). Critical success factors in enterprise wide information management systems projects. *Proceedings of the 1999 ACM SIGCPR Conference on Computer Personnel Research - SIGCPR '99*, 297–303. doi:10.1145/299513.299722
- Swaminathan, S. (2011). Critical Success Factors of ERP Implementation by, (August).
- Umble, E. J., Haft, R. R., & Umble, M. M. (2003). Enterprise resource planning : Implementation procedures and critical success factors, 146, 241–257.
- Vilpola, I. (2008). Applying User-Centred Design in ERP Implementation Requirements Analysis Applying User-Centred Design in ERP Implementation Requirements Analysis.
- Vincent, B. (2013). ERP Implementation at Atlantic Mechanical Contractors.: Applying Change Management.
- Yick, J., & Manager, F. (2011). Implementing Vanilla ERP Systems : Factors to Consider in Strategy , Business Alignment , and Customization, 1277(July 2011).
- Zeng, Y. (2010). Risk Management for Enterprise Resource Planning System Implementations in Project- Based Firms.
- Zeng, Y., Lu, Y., & Miroslaw, J. (2012). Enterprise Resource Planning Systems for Project-Based Firms : Benefits , Costs & Implementation Challenges, 4(1), 85–96.

Appendix A

Appendix A

Interview Guide

Organization

Interviewer: Bridgette L Sitler

Interviewee

Date:

Time:

Purpose of Interview: The purpose/objective of this research/ case study is to critically assess the Change Management approach that was adopted by GIPF for the Enterprise Resource Planning (ERP) project implementation carried out in the year 2009.

SECTION A

Main Research Question: The following research question frames this study

What was the Change Management approach adopted by GIPF for the ERP Project Implementation for GIPF in 2009, and how can change management strategies facilitate a more effective ERP Implementation?

The main research question is supported by the following sub questions:

Sub-questions

1. What is Change Management theory and how is it applied to ERP implementations?
2. What are the most important critical success factors that will facilitate the result of the ERP implementation?
3. What are the most important mechanisms of effective Change Management in the implementation of ERP Systems?

Ethical Issues:

The research success relies upon your honest opinion thus treating information confidentially is of the utmost importance. I would like to assure you that privacy and confidentiality will be maintained; participants will remain anonymous so that no one will be able to recognize your sayings in the completed dissertation.

General System Background

1. What was your role with regards to the ERP Implementation?
2. Briefly describe your responsibilities with regard to the ERP Implementation.

SECTION B

What is Change Management theory and how is it applied to ERP implementations?

1. What were the main reasons why there was a need to implement an ERP Solution
2. How were these reasons for the change communicated to you?

3. What key aspects of the organization and the culture were critical to protect?
 - Organisation (strategic , operational goals, values, structure, control)
 - Business processes (new business process)
 - Employees (organisation culture and climate)
 - Technology (knowledge, techniques)
4. What were the changes to the organization and culture and how did you address these changes?
 - Organisation (strategic , operational goals, values, structure, control)
 - Business processes (old business process)
 - Employees (organisation culture and climate)
 - Technology (knowledge, techniques)
5. From your observations, to what degree did the people of the organization understand and buy in to the need for this change?
 - Was there a readiness assessment done?
 - Were there any issues before implementation?
 - How were these issues addressed?
6. Were the people affected by the change, appropriately involved throughout the change process?
 - Were you regularly informed about the progress of the ERP Implementation
 - How did you share information regarding the ERP implementation with other team members?
7. What were the benefits of the ERP Implementation?

SECTION C

What are the most important critical success factors that will facilitate the result of the ERP implementation?

1. Do you think the composition of the ERP Implementation team was done properly?
 - Who were the key stakeholders?
 - Did they form part of the implementation team
 - Did the team possessed the knowledge and skills (Please Elaborate)
2. Can you explain the change program and culture initiative identified in the ERP Implementation?
3. Please discuss the approach to the ERP implementation?
 - How much customization was allowed?
 - Was there any Business Process Engineering done?
4. Does the ERP system support the business operations efficiently and effectively?
 - Please Elaborate
5. What was the methodology used for testing and troubleshooting?
 - Do you think that the testing was done properly? (Please elaborate)
 - Customizations (Reports, forms and interfaces)
 - Interface on Legacy Systems

6.
 - What project monitoring tools were used?
 - Were there continuous evaluation and monitoring done throughout the Implementation process?
 - What were the performance review and gap corrections processes?
7. Do you think that the computer culture in the organization had an
8. impact on the Implementation?
 - Please elaborate
9. Is the system satisfactory/unsatisfactory?
 - Why do you think is satisfactory/unsatisfactory
 - Any suggestions

SECTION D

What are the most important mechanisms of effective Change Management in the implementation of ERP Systems?

1. Do you think the management properly budgeted for this project?
 - Was there adequate funds made available?
2. What were the project vision and mission?
 - Was this communicated properly to everyone throughout the implementation?
3. Was there management support? (Please Elaborate)
 - Did management provide the proper resources?
 - Did they provide leadership? Could this be recognized through their actions?
 - Did they communicate the business plan and vision?
4. Can you please explain the training program?
 - What type of training given before and during the implementation?
5. What incentives were given to you?
 - Monetary/ Non-Monetary
6. Was there an effective and proper communication program before and during the implementation?
 - Please elaborate
 - Were all stakeholders taken into consideration?
7. What post implementation activities were put in place?
 - Help Desk
 - Documentation
 - On-line Help

Closure: Thank you very much for your time. Your knowledge and insights will be very helpful to me.

Ending Interview Time: