Investigating the challenges during the post-implementation stage of an ERP system at an FMCG company

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ABSTRACT

Companies today considers the Enterprise Resource Planning (ERP) system beneficial for their operations because it provides a holistic view of the business real-time information from different geographical standings.

ERP systems have replaced numerous legacy systems where each system performed a different function which was difficult to manage. Although the ERP system integrated all these systems into one, it was however found that there are challenges in its implementation stages which are more evident in the post-implementation stage.

This study sought to investigate the challenges at the post-implementation stage of the ERP system at the Fast-Moving Consumer Goods Organisation (FMCG) Company. To achieve this, the research was guided by the positivism paradigm where variables were created to measure social phenomena using a scientific approach to generate acceptable knowledge.

The nature of the study dictated the use of a quantitative research approach where a structured questionnaire with close-ended questions was administered to all the targeted respondents to determine the perceptions of ERP users on their experience in using the ERP system. The collected data was statistically analysed using a Statistical Package for the Social Sciences (SPSS) tool.

The study indicated six major ERP system findings, namely, Scheduling of the ERP training, ERP system training time allocation, knowledge of the training conductors, practical part of training, technical support and knowledge sharing. Recommendations were provided based on the aforementioned findings.

Keywords: ERP systems, post- implementation, ERP end-users.

ABBREVIATION AND ACRONYMS

ERP: Enterprise Resource Planning

SAP: Systems Application and Products

FMCG: Fast Moving Consumer Goods

SPSS: Statistical Package for Social Sciences

MBA: Master in Business Administration

SLA: Service Level Agreement

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CHAPTER 1: OVERVIEW OF THE STUDY

1.1 Introduction

Enterprise Resource Planning (ERP) systems are enterprise-wide information system packages, consisting of wide-ranging software modules that aim to support and integrate all key business processes across various functional divisions of an organisation (Peng & Nunes, 2013:472). These ERP systems have replaced silo-based legacy systems, providing the potential for substantial business benefits to the organization (Zeng & Skibniewski, 2013:351). The reason that organizations employ numerous legacy systems, each performing a different function, becomes difficult to manage while an ERP system integrates all these functions into one system. Ever since ERP systems have emerged in the early 1990's they have been widely adopted and implemented by thousands of small and large organizations across the world within the public and private sectors (Tsai et al., 2010:26).

ERP systems are complex software packages designed to coordinate business across the whole value chain of the organization (Da Xu, 2011:637). These systems allow companies to automate and integrate their business processes, share a common database and business practices throughout the enterprise, and produce real-time information across all functions of the business (Heizer et al., 2014). According to Gopaul et al. (2016:29), many organizations choose to implement ERP systems aiming to increase productivity, efficiencies and organizational competitiveness to gain a competitive edge over their competitors.

The most commonly known definition of an ERP system is a single software package that provides unified business functions by integrating company business core processes or components into one (Hawari & Heeks, 2010:157). Rahman et al. (2015) also added that the ERP systems attempt to integrate business functions into a single platform to streamline the processes and information flow across the whole organization to support all possible functions of a different business unit. ERP systems represent one of the widely adopted information systems by many organizations within different industries such as distribution, manufacturing, education, construction,

healthcare, retail, telecommunication and public sector (Momoh, Roy & Shebah, 2010).

ERP systems have been expanded over the years from simply coordinating the manufacturing process to be the integrator of enterprise-wide backend processes (Irakoze, 2016). The ERP implementation goes through various phases, for this study, five ERP implementation life cycle stages will be discussed to provide a clearer understanding of the study focus. The ERP implementation process is a complex process which requires not only upgrading the current technology but also different organizational adaptations in order to make the best use of the system, additionally, in developing such a system an organization needs proper planning, requirements analysis, detailed design to be implementation and system maintenance to succeed (Parhizkar & Comuzzi, 2016:712)

There are procedures of the configuration of the ERP packages which is contained in the implementation process and adjusting it depending on the business requirements of a company (Pajk et al., 2010:36). According to Parhizkar (2016), It is evident that the project preparation and business blueprint phases are the significant phases of the implementation life cycle due to the crucial investment in such a particular system for the company.

The following are the various phases in the ERP implementation life cycle:

Project preparation: ERP systems implementation are capital intensive projects and for the organization to invest in this type of project there is a need to address all the details about the project (Gulledge et al., 2005:733). The project preparations stage in implementing ERP system involves critical decision around project intended goals, communication by top management to the end-user, drafting of project scope and schedule, project budget allocation and establishing the relevant executive team to lead the project (Gulledge et al., 2005:733)

Business Blueprint: (Gopaul et al., 2016:29) maintains that business blueprint involves documenting the company requirements that motivated the implementation of ERP system and choosing the type of ERP system that will be compatible with the company requirements outlined. Furthermore, this stage addresses the link between the chosen ERP system and the company structure, business function, and processes.

Pre-implementation: This stage comprises of different decision points regarding the deployment of the ERP system, which will be done so by considering configurations tabled from the business blueprint (Gopaul et al., 2016:29). Key activities in this stage will include software selection, integration testing, and end-user documentation.

Implementation: Tian & Xu (2015) explain the implementation stage as the period whereby an adopting company engages in the installation, configuration and the roll-out of the ERP system. This stage is the final preparation stage whereby system testing is done and removing of unnecessary activities. This stage also includes addressing gaps in the business requirements, system configuration, communication, user resistance, user training and support (Tian & Xu, 2015).

Post-implementation: According to Nicolaou (2004a:595) ERP post-implementation is the stage after the implementation stage and it's often referred to as "Go Live". This phase encompasses several processes like the post-implementation review, user support, and system maintenance which are important to the success of the system (Nicolaou, 2004b:47). Abdinnour and Saeed (2015:257) are of the view that ERP Go-Live and support is the cornerstone of the post-implementation stage. Wagner and Newell (2007:32) is against the fact that companies treat the ERP project as a project which has a termination date at a post-implementation stage as they argue that the post-implementation stage is where the real ERP system challenges begin.

1.2 Problem Statement

Despite the huge interest in adopting ERP systems due to their highlighted benefits and efficiencies to the organization, their successful implementation rate remains low and many organizations do not achieve their intended goals of adoption (Scholtz & Atukwase, 2016:85). What is disturbing, is the fact that rescuing troubled implementations, often costs three times over the initial budgeted amount to the ERP implementation project (Schubert & Williams, 2011:826). Organizations implementing ERP systems must spend time researching the cause and challenges of implementing an ERP system to better prepare for the ERP implementation project and avoid the trap of being part of the organizations that executed failed ERP implementation projects.

It is important to note that while ERP systems promise a lot of value and competitive edge to business, their implementation is still characterized by a high failure rate (Zeng & Skibniewski, 2013:351). According to Albertus (2016) such failures have bankrupted adopting organization on account that they disrupt current business processes. ERP systems happen to have both high complications and high benefits which means that most of the organizations intending to implement ERP systems must always be aware of failures and document a contingency plan to address the unforeseen circumstances.

There are a lot of challenges presented in the literature pertaining to the implementation of ERP systems across all the implementation phases. This study aims at investigating the challenges at the Post-Implementation stage of the ERP system life cycle at a Fast-Moving Consumer Goods (hereafter referred to as FMCG) company.

1.3 Objectives of the study

1.3.1 Primary Objective

This study aims at investigating the challenges at the post-implementation stage of the ERP system at the Fast-Moving Consumer Goods Organisation (FMCG) Company.

1.3.2 Secondary Objectives

To determine the nature of ERP system training administered to end-users

To understand the impact of ERP system training on the ERP system implementation project.

To determine ways to address ERP system post-implementation challenges

1.4 Research problem/ questions

1.4.1 Main research question

To address the main research objective, this study should answer the main research question: What are the challenges in the post-implementation of an ERP system?

1.4.2 Secondary research questions

To fully respond to the main questions, the study should seek answers to the following secondary questions:

Was there an ERP system training administered to end-users?

What is the impact of ERP system training on ERP system implementation?

How could ERP system post-implementation challenges be addressed?

1.5 Scope of the study

1.5.1 Field of study

The scope of the study involves the challenges during the Post-Implementation stage of an ERP system at an FMCG company. Many companies over the years have been investing in information systems to improve the quality and the flow of information across the whole value chain. Ynzunza and Izar (2011) highlighted that information systems offer great opportunities for success for companies, given that they have the capacity of gathering, processing, circulating, and sharing information in an integrated manner. The role of these systems on strategic management reporting will be investigated in both local and global application.

1.5.2 Geographical Demarcation

The study will be performed at an FMCG company with a special focus on the company's Animal Feed business. The company operations are situated at five different sites across the country. The first factory is situated in the North-West province, the second factory situated in the Gauteng Province, the third factory situated in Kwazulu Natal Province, the fourth factory situated in the Eastern Cape province and the last factory situated in the Western Cape province (names of factory and their direct location withheld at the request of the company). This company implemented a SAP ERP system less than two years ago with functions in production, procurement, inventory material management, accounting, sales, customer service, and maintenance.

1.6 Research Methodology

1.6.1 Literature Review

The literature review defines ERP systems, provides a historical overview, and the benefits of the system that support the reason why companies adopt ERP systems. The chapter will continue to discuss the challenges that companies experience at the Post-Implementation stage when implementing the ERP systems. To ensure that the literature review reflects a comprehensive overview of the topic, a wide range of credible sources was consulted. The sources included published journals and articles, textbooks, previous dissertations, websites through a different search engine like Google Scholar.

1.6.2 Empirical Study

This section includes a description of the specific technique to be employed, the specific measurement instruments (Questionnaire) to be used and the activities initiated in conducting the research (Quantitative research)

1.6.2.1 Research Instrument (Questionnaire)

Bhattacherjee (2012) explains the questionnaire as a research instrument consisting of a set of questions (items) intended to capture responses from respondents in a standardised manner. These questions can either be structured or unstructured. Structured questions ask the respondents to select an answer from a given set of choices and unstructured questions ask respondents to respond to their own words (Akinyetun, 2016). Structured questions will be employed for this study. Structured questions help respondents make quick decisions because they reduce the amount of thinking and effort required by respondents, reduce bias and help the researcher to code the information easily for subsequent analysis (Obeidat & Abdallah, 2015).

1.6.2.2 Study Population and Sampling Method

The title of the study refers to investigating the challenges during the post-implementation stage of the ERP system at an FMCG company. The study will be conducted at company operations based in North-West province with 20 ERP system users, Gauteng Province with 15 users, Kwazulu Natal Province with 15 users,

Eastern Cape with 15 users and Western Cape with 20 users. To successfully answer the study research question and meet the research objectives the study will focus on all the ERP system users at the selected company. The company Animal Feed operation has a total of 85 (eighty-five) ERP system users actively working on the system day-to-day to perform their duties. The target is to receive at least 75 (seventy five) respondents from the total population identified.

1.6.2.3 Data Collection

The questionnaire was distributed to the respondents electronically through email. Every respondent participated voluntarily with no undue pressure, as evidence of completion of the mandatory informed consent form was provided with the questionnaire which should be signed before the participant complete the questionnaire. Confidentiality of participants was given high priority and there were no identifiers traceable to the respondent which encouraged many users to participate in the responses.

1.6.2.4 Data Analysis

The data was received back from the respondents through email and the researcher confirmed that all the received questionnaires were answered in full. Data collected were analysed using the Statistical Package for the Social Scientists (SPSS) through the North-West University statistician's services.

1.7 Layout of the Study

A brief description of the main element and focus of the study is outlined, which represents the process flow of this particular research. The main part of the study was divided into five chapters, which are summarized as follows:

Chapter 1- Serves as an introduction and outline of the study focus. It commences with the problem statement to highlight the researcher's interest in the topic and motivation of undertaking the study. The objectives of the study are discussed to highlight the researcher's intended goal, the scope of work, geographical demarcation to highlight the areas where the study will be performed and lastly the research methodology for the study.

Chapter 2- Focuses on the literature review which covers the historical overview of Enterprise Resource Planning (ERP) systems & their origin from Material Resource Planning (MRP), detailed definition of ERP systems, why companies adopt ERP systems, benefits and disadvantage of adopting ERP systems and lastly the challenges in post-implementation of ERP systems. This chapter focused on the academic discourse drawn from the raging debate of different scholars to learn from their findings.

Chapter 3- presented the research methodology of the study. A detailed research process of the study will be discussed and the statistic tests used in analysing the data will also be provided in this chapter.

Chapter 4- The result will be summarized, analysed and presented.

Chapter 5- Outlines the research findings of the study and integrate information gathered from this study in terms of the study objectives together with the suggestion of future studies.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theoretical framework of Enterprise Resource Planning (ERP). In unpacking the ERP systems, the focus of this chapter will be on the analysis of some of their major contributions in business applications. The chapter analyses the available literature on ERP systems to provide a deeper understanding of the topic at hand.

2.2 Historical Overview

During the twentieth century, there was increasing pressure on manufacturing firms which forced them to make their processes more effective and efficient, and then the only significant factor for improving their manufacturing processes was production control (Zmud & Cooper, 1989).

Therefore there was a variety of information systems to support production control such as Material Requirements Planning (MRP) which was the most preferred and Optimized Production Technology (OPT) which was established to replace the old-fashioned reorder point-based information systems (Zmud & Cooper, 1989). Zmud & Cooper (1989) state that the MRP used the information on future finished goods demand and an integrated model on the whole production process in determining the correct timing and quantity of materials to purchase and produce.

The MRP was unique because the necessary timing and amount of a particular component were derived from the requirements for advanced level components and eventually ultimately future finished goods demand, however, MRP had a history of problems due to its extensive implementation (Zmud & Cooper, 1989). Some of the weaknesses experienced with MRP included among others, inaccurate data, poor integration with other information systems and lack of top management support (Zmud & Cooper, 1989).

2.3 Definition of Enterprise Resource Planning Systems

Addo-Tenkorang & Helo (2011) are of the view that an ERP system allows companies to integrate all key business processes to enhance productivity and uphold a competitive position. The ERP system is thus an enterprise-wide information system that incorporates and controls all the processes which are involved in the whole organization.

Shatat (2015) defines an ERP system as a technology infrastructure that can assist companies with integrating information from all departments from suppliers to customers. The ERP also connects all internal and external functions and processes of a company in order to create a close relationship between a customer and a supplier.

Vaidyanathan & Fox (2017) agree with the latter by emphasizing that the ERP system integrates information flow from all spheres of the company itself, customers and suppliers. Additionally, an ERP system uses a common database which updates all information within the system which will then be issued among concerned parties. Furthermore, an ERP system allows various partners to share information, provide assistance for the effectiveness of the supply chain management and also increases the flow of information, which enables managers to get precise and up to date information (Shatat, 2015).

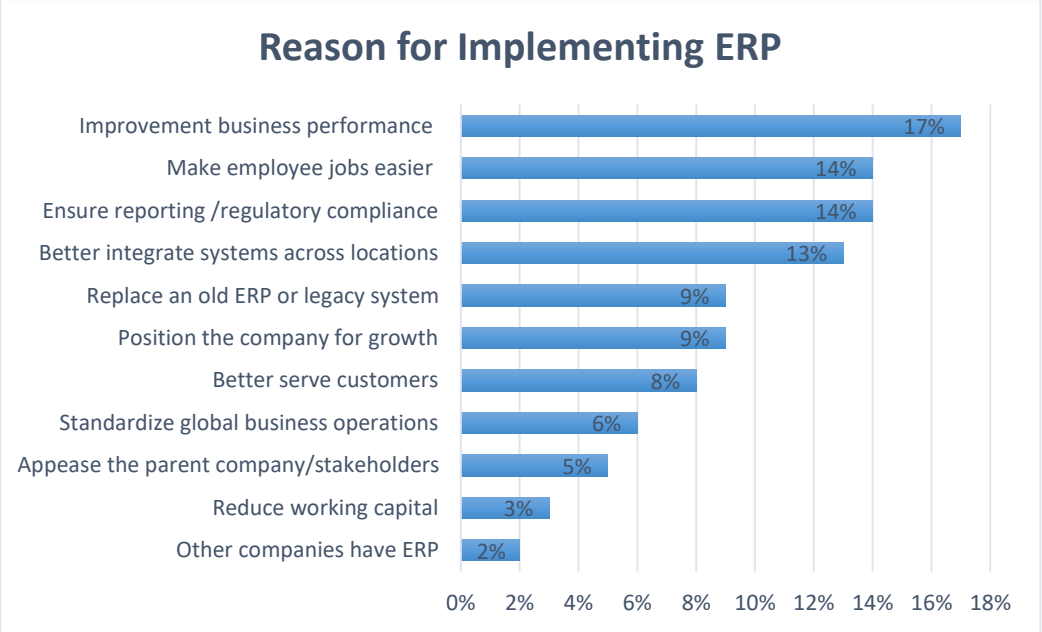
Additionally, Vaidyanathan & Fox (2017) are of the view that ERP systems are customizable business software that assists companies or organizations with automating and integrating all business processes and legacy systems. These scholars further posit that these systems also assist with data sharing and dissemination of information in a real-time environment. The following section will focus on the advantages of ERP systems in the everyday running of organizations or businesses. It will also focus on the benefits of an ERP system.

2.4 Why ERP systems

The study conducted by Panorama Consulting Solutions (2017) revealed the perceived ERP systems outlined benefits. The study was conducted based on a total of 342 completed surveys and aimed to investigate software selection, implementation

and satisfaction trends across industries, customer experience with regards to ERP applications, and the overall implementation process (Panorama Consulting Solutions, 2017). The perceived justifications for the implementation of ERP systems are illustrated in Figure 2.1.

Figure 2.1: Reasons for implementing ERP systems



Source: Panorama Consulting Solutions, 2017

Seventeen percent of the sample implemented ERP systems to improve their business performance while 14 (fourteen) Percent considered ERP implementation because it makes the job of their employees easier and ensures reporting/regulatory compliance. Nine percent of the sample would replace an old ERP or legacy system and position the company for growth whereas eight percent of the sample believes that an ERP system will assist in improving customer service.

2.5 ERP systems benefits

ERP systems have numerous benefits, but the two most important benefits are: it provides a fundamental connection between the functionality and the processes of the business and second, it ensures data integrity, security which is not easily attainable by other different software (Koh, Gunasekaran & Goodman, 2011). According to Ragowsky & Somers (2002) an ERP system can assist the companies with enhanced

production planning, cost reduction, upsurge efficiency, and rationalized business processes.

Sadrzadehrafiei et al. (2013) outline the intangible benefits of an ERP system implementation and they include improved customer satisfaction, developed vendor performance, increased flexibility, reduced quality costs, improved resource utility, improved information accuracy, and improved decision leading to capability. Furthermore, there are other intangible benefits of the ERP system and they are a decrease of lead time, on-time shipments, double business, increase of inventory turnover, cycle time, and also work in progress (Sadrzadehrafiei, et al. 2013).

Many companies may rapidly achieve competitive benefit with the successful implementation of an ERP system (Bibi & Hassan, 2014). The ERP system forwards communication and transfers data of important information in a company (Ahmed & Ayman, 2011). Workers have quick contact with real-time data, reports, and documents that concerns their responsibilities. According to the position of each user, information flow is fully customized (Tambovcevs & Tambovceva, 2013).

Due to the globalization and competition of the corporate environment, organizations in various industries needed an advanced and better communication system between their stakeholders and because organizations were facing segregation in all their business functions Sadrzadehrafiei, et al. 2013). Thus, to resolve these problems companies had to implement the ERP system because the ERP systems are effective in ensuring a flow of information into one system. furthermore, ERP systems come with many benefits which are categorized into five significant benefits which include:

Operational benefit:

involves business operational processes automation and seamless process changes which will unlock efficiencies like cost reduction, customer satisfaction, productivity improvement and quality which translates to the improved bottom line. Furthermore, findings indicate that operations become faster so that there is no extra waste of time for employees to acquire data or send data because data is available on time (Smadi, 2016).

In terms of cost reduction, Mishra (2014) posits that ERP contributes to labour cost reduction in customer service, finance, human resources, purchasing, IT services, and training. This researcher also attributes a reduction in inventory cost in inventory turns, dislocation costs, and warehousing costs to ERP. He furthermore postulates that administrative expenses reduction in printing and other business supplies are also the results of a well-implemented ERP system.

In terms of cycle time reduction, Mishra (2014) claims that ERP reduces lead time in customer support activities in order fulfillment, billing, delivery, and customer inquiries. Also, ERP is considered time-saving in employee support activities in month-end closing, requisition, HR & payroll, and learning. ERP is also considered time-efficient upstream in supplier support activities in order processing, information exchange, and payment.

When focusing on Internal business environment, ERP is deemed beneficial in that productivity is improved. Mishra (2014) states ERP productivity improvements such as production per employee, production by labour hours, production by labour costs, increased work volume with the same workforce, and reduced overtime.

Managerial benefit:

Mishra (2014) considers the following to be the ERP's managerial benefits, improved resource management, better asset management for improved cost, depreciation, relocation, custody, physical inventory, and maintenance records control, improved inventory management in shifting products where they were needed and responding quickly to surges or dips in demand. He posits that managers can see the inventory of all locations in their region or across boundaries, making possible a leaner inventory. The researcher further alludes to improved production management by coordinating supply and demand to meet production schedules at the lowest cost, better workforce management for improved workforce allocation, and utilization of skills as managerial benefits of the ERP system.

Strategic benefit:

According to Mishra (2014), strategic benefits are in a wide spectrum of activities in internal and external areas. The researcher posits that these benefits translate directly to the vision of every organization and thus worth prioritizing. These include among others, general competitiveness, product strategies, strategic capabilities, and competitive position of the organization.

IT infrastructure:

Research reveals that IT infrastructure can unify the company's IT costs and improve efficiency. Instead of spending resources on multiple systems that all need dedicated staff, infrastructure, support teams and licenses, companies can focus all these costs into one ERP. Additionally, if companies spend more on disparate systems than they would on a centralized ERP, they might even save on IT costs overall. Using a single system also reduces training requirements for end-users, since they only need to learn one system rather than interacting with numerous individual applications.

Organisational benefit:

According to Sadrzadehrafiei, et al. (2013) ERP system support business growth and integration of new acqquition, drives cost savings within the organisation and makes it easier to participate into online trading which transalate to the strategic goals and ultimately the vision of every organisation. Mishra, (2014) findings about organisational benefits was that:

- ERP system is considered to support business growth:
    - In transaction volume, processing capacity and capability
    - With new business units
    - In products or services, new divisions, or new functions in different regions
    - With increased employees, new policies and procedures
    - In new markets and
    - With industry's rapid changes in competition, regulation, and markets.
- ERP system supports business alliance by:
    - Efficiently and effectively consolidating newly acquired companies into standard business practice

- Building consistent IT architecture support in different business units
- Changing selling models of new products developed by a merged company
- Transiting new business units to a corporate system.
- Integrating resources with acquired companies.

- Building business innovation by:
  - Enabling new market strategy
  - Building new process chains
  - Creating new products or services
- Building cost leadership by:
  - Building a lean structure with streamlined processes
  - Reaching business economies of scale in operation
  - Shared services.
- Generating product differentiation by:
  - Providing customized product or services, such as early preparation for the new EMU currency policy, customized billing, individualized project services to different customer requirements, and different levels of service appropriate for various sizes of customer organisations
  - Providing lean production with make-to-order capabilities.
- Enabling worldwide expansion through:
  - Centralized world operation
  - Global resource management
  - Multicurrency capability
  - Global market penetration
  - Cost-effective worldwide solution deployment.
- Enabling e-commerce by attracting new customers or getting closer to customers through the Web integration capability. The Web-enabled ES provides benefits in business to business and business to individual in:
  - Interactive customer service
  - Improved product design through customer direct feedback
  - Expanding to new markets
  - Building virtual corporations with virtual supply and demand consortia
  - Delivering customized service
  - Providing real-time and reliable data enquiries

- Generating or sustaining competitiveness
- Maintaining competitive efficiency
- Building competitive advantage with quick decision making
- Staying ahead of competitors for better internal business support
- Using opportunities generated by enterprise systems to pull abreast of world leaders by using the same software and being compatible with customers.

2.6 ERP systems Drawbacks

Despite the ERP being a vital information system to organisations and companies, without its successful implementation, the anticipated benefits of improved productivity and competitive advantage would not be imminent, thus, if it is successfully implemented, it can be a practical solution to attaining an integrated enterprise information system solution for businesses and organisational industries (Addo-Tenkorang & Helo, 2011).

However, there are disadvantages associated with the ERP system such as:

- The ERP being very complex, costly and demanding a considerable investment of time and personnel,
- Being a huge project necessitating enterprise to pay much attention to the interests, motivations, expectations, and actions of a variety of stakeholders including IS professionals, senior management, business management, and external partners such as vendors and consultants,
- And also, an inaccuracy resulting from improper strategic selections of enterprises in the adoption phase (Hoseini, 2012).

2.7 Challenges in post-implementation stage of ERP systems

ERP systems are important Information Technology (IT) and the cornerstone of the company's business processes integration (Ptak and Schragenheim, 2016). This study aims at understanding the challenges at Post-Implementation stage of the ERP project. Literature highlight a few research papers reporting issues that come in the Post-Implementation stage even though it is the stage in the ERP system lifecycle

where the systems must yield results and provide a competitive advantage to the business (Law et al. 2010 & Wilson, 2012).

2.7.1 Change Management

Most scholars highlighted the fact that it is important to implement change management as it assists companies with addressing problems such as resistance to change (Odhiambo et al. 2010). Shah, Khan, Bokhari & Raza (2011) emphasize that the lack of end-user involvement in the implementing process is a leading cause of user resistance.

According to Dantes & Hasibuan, (2011) many establishments are not effective when implementing an ERP system which is not solely because of the approach in implementing an ERP system but as because organisation culture is not ready to adopt the system. Furthermore, there is a need for employee involvement in the ERP implementation process because they have a substantial influence on the success of the system. User contribution is the process of which users are enabled to become actively and genuinely involved in defining the issues of concern (Skhah et al. 2011).

Ranjan, Jha & Pal (2016) propose that before the business resolution to implement an ERP system, end to end business analyses that include organizational approach, organization of the business, organizational culture and operational processes must be carefully assessed to assure that they are compatibility to the ERP system or there might be a necessity for organizational change. This will motivate change to the affected business development of which this will mean that employees must also change their work ethics to have favorable outcomes (Ranjan et al, 2016).

2.7.2 Employee Resistance

Employee resistance is one of the major challenges companies face when it comes to change management and there is a variety of sources and types of resistance to change, however, in dealing with employee resistance to ERP implementation, a company’s top management must resort to analysing the root causes of resistance and implement appropriate strategies which will balance them (Alballaa & Al-Mudimigh, 2011).

Alballaa & Al-Mudimigh (2011) maintain that there are various change management initiatives such as employee involvement, addressing employee problems and the provision of support groups that can address the effect of resistance to change and enhance implementation success.

Haddara & Moen (2017) emphasize the importance for organizations to understand the reasons for user resistance in order for organizations to employ the right strategies and communication in reducing and overcoming resistance, furthermore scholars are of the view that honest and effective communication during ERP implementations can minimize user resistance.

There are other studies that propose three theoretical perspectives for user resistance namely, people-oriented, system-oriented and interaction-oriented (Haddara & Moen, 2017).

The people-oriented approach: emphasizes that internal factors such as age, gender, background, traits, values, and attitude toward the new system to individuals or groups can lead to a user's resistance to technology.

The system-oriented approach: emphasizes that external factors such as technological factors like performance, user interface, ease of use, reliability, and realization of requirements lead to user resistance

The interaction-oriented approach: emphasizes that user resistance can be caused by the change in social structure, power relationships and even job structure. It argues that neither people or system characteristics lead to resisting the system but it can be due to people's fear that the implementation of a new system might take away their social growth or power, thus, it maintains that users' perceived values, before and after the implementation, are the reasons for users to resist the new system.

Therefore, it is important for organizations and top management to understand the sources in order to engage appropriate strategies in reducing user resistance. Organizations and top management can appropriately market the ERP to the employees as a strategy to reduce user resistance (Haddara & Moen, 2017).

Additionally, there is a need for top management to have strategies put in place in order to address the negative effects of user resistance because in the absence of such strategies organizations may easily make mistakes of punishing or promoting the wrong employees or even taking no action to address resistance (Haddara & Moen, 2017).

There are three main types of resistance behaviour namely; non-destructive, proactively destructive and passively destructive and all these types underlie several behaviours as an example, requesting a job transfer during or post-implementation can be classified as non-destructive resistance (Haddara & Moen, 2017).

Disrupting work process with intentions and making inconsiderate mistakes fall under the proactive category and the passively destructive behaviours will moreover include refusing to cooperate with peers and neglecting of work assignment thus, resistance can also be of great value to organizations as it provides feedback to the implementer and managers can address problems and get an understanding as to why users resist the ERP system (Haddara & Moen, 2017).

Furthermore, it is vital for all change management managers to always keep in mind the organization's culture and values because these are the main factors that influence the recognition and adoption of change in an organization (Alballaa & Al-Mudimigh, 2011).

2.7.3 Culture

Jones et al. (2006) is of the view that ERP is an acknowledged tool which is characterized as a cost-cutting tactic, can be used to integrate business processes and brings changes in culture of an organisation. However, major cultural changes in an organization can only be achieved through changes in attitude, values, and behaviours of employees.

There is a significant need for organizations/ companies to understand culture in order for them to acquire a higher understanding of information management, application functionality and ERP acceptance, thus, staff's attitudes in the direction of computers and organizational confidence on computers play a significant role in ERP implementation (Altamony, 2016). For example, a country's regional

environment/culture can have an impact on the use of its ERP systems, furthermore, countries with huge populations have low penetration whereby they choose to adopt methods of increasing human efficiency instead of substituting humans with integrated systems (Huang & Palvia, 2001).

According to the study performed by Islam, Jasimuddin & Hasan, (2015) there are three different types of organizational cultures, which are Hierarchical, Rational and Group Culture. The three cultural types are discussed below:

A Hierarchical Culture is all about emphasizing internal controls, order, rules and regulations of the organization. According to Cameron & Quinn (2011) Hierarchical Culture is when the organizational management tends to be conservative and enforce execution based on set regulation of the organization. Management will usually distribute hard copies like manual and documentation according to regulations as a guideline to resolve ERP related challenges during implementation (Jones et al. 2016)

Rational Culture emphasizes organizational productivity, performance, goal fulfilment and achievement. According to Chen et al. (2012) when employees work in an environment that supports productivity to achieve organizational goals and enhance their self-confidence it is easy for the employees to resolve ERP related challenges. The environment is competitive and employees are always motivated by the reward system for their achievements (Cameron & Quinn, 2011). Lui et al. 2012 argue that contingent rewards system and constant meeting with ERP users to track individual understanding level is important to motivate ERP users to achieve ERP system goals.

Group Culture emphasizes flexibility and change within the organization. It is characterized by strong human relations, affiliation and focus on the internal organization. According to Cameron & Quinn (2011) an organisation that has created a group culture environment tends to put a special focus on trust and sense of belonging, which encourages employees to work together as a team than in silos to accomplish tasks.

Liu et al. (2012) argue that ERP users normally encounter a different type of challenges with ERP system functionalities that they cant resolved and rely on technical support. Furthermore, through collaborative teamwork ERP system users can learn the different skills from each other through private and informal

communication and sharing experiences to resolve their difficulties in an ERP system. The researcher concurs with the views provided by Liu et al. (2012) which support the statement from Sheng et al. (2003) & Shao et al. (2013) which says that knowledge sharing amongst the team increases user's confidence and judgment of their capacity to resolve ERP challenges.

2.7.4 Training Requirements

Training is one of the crucial factors in ERP implementation, thus, effective training is important to the ERP system adopting the company, moreover, effective training is a factor that is critical to a successful ERP implementation (Alballaa & Al-Mudimigh, 2011). Companies that adopt ERP systems should properly train their end-users to possess relevant skills on how to work with the ERP system and explain its relation to company business processes (Alballaa & Al-Mudimigh, 2011).

There are several ERP system training areas discussed by different scholars which are explained in the section below. The aim is to unpack different components within training to better understand ERP users' requirements and concerns.

2.7.4.1 Training Method

The study done by Chayakonvikom et al. (2016) found that end-users were dissatisfied because the training course was focused on lecturing and failed to give enough practical or hand-on experience about the new ERP system. Furthermore, they have highlighted on-the-job training as their area of concern. This method of training is also known as "train-the-trainer" whereby key-users are selected by the adopting company to be trained extensively by experienced ERP consultants for them to transfer the knowledge to their colleagues and it is also has been recommended by many ERP vendors (Alballaa & Al-Mudimigh, 2011). This training method is widely employed by many adopting companies because it reduces the training costs and allows the company to train new employees internally (Alballaa & Al-Mudimigh, 2011). However, there are concerns about being trained by the key-users because they often lack the capability to transfer knowledge, unable to properly respond to end-user's questions on the business processes and various functions of the ERP system (Chayakonvikom et al, 2016).

2.7.4.2 Training scheduling

Learning new skills in the training process can be used as a process to partially eliminate people's behaviour. Knowledge seems to be the most significant factor in overcoming people's reluctance and this can be developed throughout the training process. Building knowledge needs time so attention should be given to training schedule and time duration. The should be an agreement on training schedule with the vendor also considering system characteristics (Soja et al. 2009:625).

According to Scott (2005) there should always be the proper establishment of training strategies in advance and maintained during implementation. Moreover, there is a significant impact in analysing the training scope on the whole training strategy particularly in the training schedule (Esteves, 2014:668).

Additionally, Welti (1999) says training should be synchronized with the whole project implementation because formal training for all users is not usually practiced at the beginning of the implementation and this is because other organizations deploy training programs months before the ERP goes live.

Gupta (2000:116) maintains that poor end-user training is a common problem in all ERP implementations and continues to say that when the ERP system is ready to go-live there is usually no one in the organization who knows how to use it and also there is lack of training in the maintenance aspects of the system.

2.7.4.3 Training Content

According to the study of Chayakonvikom et al. (2016) end-users were unhappy with the training content because the content didn't cover all their training requirements. The content covered only the standard business processes and didn't include particular company business processes critical to the business. The training content was not sufficient to enhance the user's knowledge to tackle the ERP system in real business cases.

End users recommended that training content shouldn't only cover the parts for only their responsibility but must also include the relationship between each module in the ERP system and cross-functional business processes that explains different user's

role in the transaction to enhance the understanding of the ERP system (Chayakonvikom et al. 2016).

2.7.4.4 Training and user manuals

The findings by the study performed by Chayakonvikom et al. (2016) stated that end-users were unhappy with the format and content of the training manuals provided for training. End-users concerns were around the fact that training manuals were standard to different companies and not developed to specifically suit their company. The training manuals were never based on the user's job characteristics nor were they customized to a specific company business process. On many occasions, end-users during their practical training discovered that some screen captures on the manual did not match their real screen and the manual didn't cater for troubleshooting tips and special techniques to overcome that. End users opted to either call the support team to resolve their problems as they couldn't find solutions on the manual and others opted to practice trial and error in the ERP system and created their own manuals for future reference (Chayakonvikom et al. 2016).

2.7.4.5 Training Time Allocation

The study by Chayakonvikom et al. (2016) argues that end-users were dissatisfied with the amount of time allocated for the training and periods provided for them to learn the system. According to Chou (2014) most of the end-users are pressured to learn the ERP system concepts in a very short period with the large quantity of learning material to cover.

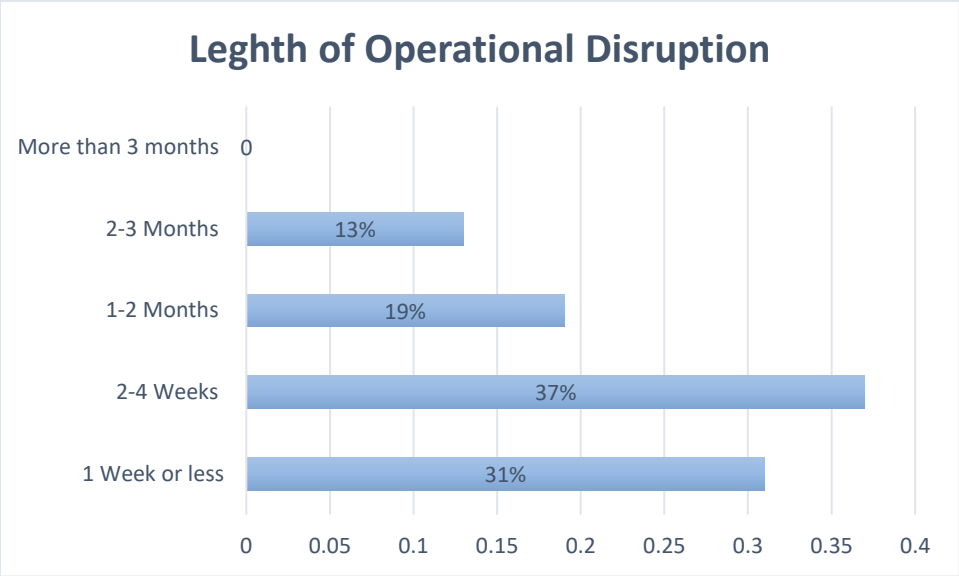
The researcher concurs with the above finding around the training time allocation because when end-users are overloaded with the information he/she might not record important information which will mean that the training was rather done for compliance and not for the end-user to take value out of it. The study performed by Chayakonvikom et al. (2016) highlighted that training mustn't only be arranged at implementation period before the "go-live" stage but the training should be held at implementation stage and post-implementation stage.

2.7.5 Operational Disruption

The study by Panorama's (2017) ERP report revealed that 56% of organisations experience some type of operational disruption at go-live, which is a slight increase over the previous year with Panorama's 2016 ERP report reporting a 48% Operational Disruption.

The illustration in Figure 2.2 outlines the length of operational disruption of which 31% happen the first week after go-live, 37% happen between two to four weeks after go-live, 19% happens between a month to two months, 13% happen between two to three months and finally after three months there is no operational disruption. Chayakonvikom et al. (2016), support the Panorama report's findings pointing out that the few months after "go-live" there will be lots of disruption which fade away as the users get comfortable to work with the system.

Figure 2.2: Length of Operational Disruption



Source: Panorama Consulting Solutions, 2017

2.7.6 Business Process Reengineering

Organization business processes are unique, It is reported that numerous ERP systems fail to be compartable to the current business process which is important for the management to review their process in order to make changes to align business

processes with the requirements of ERP systems to increase the chances of ERP success.

ERP systems are designed on “best-practice” business processes that are inherited by ERP adopting organizations (Li et al. 2017). ERP system designed standadised business processes may not be a proper “fit” between the existing business process of the ERP adopting organisation which require the organisation to reengineer the process to align with the standard once (Morton & Hu, 2008). This misalignment between these business processes will influence the possibility of success or failure with the ERP system (Morton & Hu, 2008)

According to the findings from the study performed by Van Beijsterveld & Van Groenendaal (2016) if organizations achieved a greater fit between their structures and those offered by the ERP systems, those organizations have a greater success chance with their ERP implementations. They found that where a poor fit was achieved between organizational structure and the ERP systems, organizational resistance to the ERP system was observed and thus decreasing the chance of success with the ERP system.

Van Beijsterveld & Van Groenendaal (2016) recommended that organizations implementing the ERP systems must take into consideration the implications of re-engineering their business processes when adopting the ERP system. The researcher’s views taking the discussion under literature around business process reengineering is not always the current company processes will be aligned to the requirements of ERP system and the company must be the willingness to allow reengineering to align the business processes.

2.7.7 Knowledge Sharing

Knowledge sharing is a process by which people commonly trade their insight and make new learning together. Additionally, knowledge sharing enables employees to develop and trade their opinions, presumptions, and methods of working (Chou, 2014). Feedback shared by colleagues in an organization can create an enhanced ERP system experience, thus, employees could rapidly update one another with tips on work when one figures out how a useful task can be performed.

In post ERP implementation, knowledge sharing involves more than the connection on how to perform routine tasks, it enables employees to develop and exchange their underlying opinions, assumptions and ways of working (Chou, 2014). According to Shao et al (2015), using knowledge as a resource of value creation allows for exceptional marginal rates of productivity within the organization. This is as a result of the main traits of knowledge, appreciating value with continuing use and sharing of knowledge instead of depreciating the value of tangible products or natural resources (Shao et al, 2015).

Yang (2007) is of the view that organizational effectiveness can be achieved by practicing knowledge sharing because there is a strong connection between organizational learning and knowledge sharing. Additionally, through knowledge sharing, managers can maintain the flow of individual learning throughout the entire organization as well as incorporating it for practical applications (Yang, 2007).

Moreover, common understanding between employees in an organization is achieved through sharing their thoughts, beliefs, knowledge, and experience, thus, practical applications together with common understandings are organizational knowledge which leads to employee's capabilities and also contributes to the organizational effectiveness (Yang, 2007).

Unlike independence among legacy systems, the operation of the ERP system will have an immediate impact on downstream operations. Also, operational errors that occur in one department can have negative impacts on other departments (Chou, 2014). Furthermore, users' proper operations are very important to the success of ERP systems (Chou, 2014).

This implies that the impact of post-implementation maintenance on business performance is stronger when the knowledge that is effectively stored is further shared within the organization. Additionally, the implication is that when knowledge is efficiently stored but not shared amongst team members its impact on business performance is reduced (Tsai et al, 2011).

2.7.7.1 Extrinsic Motivation

Extrinsic motivation positively relates to and it is significantly important to knowledge sharing during post ERP implementation. It provides an overview of what to consider during an individual's engagements in certain activities and it also emphasizes adopting conducts that lead to external rewards which are a controlling function and a feedback function (Chou et al, 2014).

Chou et al (2014) continue by explaining the controlling function as a function that influences individual's dependence on reward systems such as monetary compensation (tangible rewards) and explains feedback function as a function that encompasses verbal reinforcements (intangible verbal reinforcements).

Chou et al (2014) advise companies and organisations to place more emphasis on knowledge sharing among users through employing a reward system because employees who aim for extrinsic benefits are more willing to share knowledge after ERP implementation.

However, knowledge sharing does not only necessitate time management and efforts, it has the ability to also place risk on an individual's unique value within a company or an organization, thus, knowledge sharing might be possible only during one's perception that the corresponding rewards exceed its cost (Chou et al, 2014).

2.7.7.2 Knowledge Management

Varajão et al (2015) define knowledge as a dynamic human process that justifies personal beliefs towards the truth. It is dynamic because of its ability to establish interactions between individuals and it is also context-specific (focused on time and place), he continues by providing two types of knowledge, namely: explicit and tacit.

Explicit knowledge can be expressed in formal language and it can be easily codified, transferred and even stored, however, tacit knowledge is personal and there are difficulties in codifying it due to its formation in the actions, procedures, routines, values, and emotions of the persons included (Varajão et al, 2015).

According to Varajão et al. (2015) knowledge management (KM) can be defined as "process of capturing the collective expertise of the organization from different sources

(i.e. databases, paper, and people) and utilizing that knowledge base to leverage the organization". Knowledge transfer is a subcomponent of knowledge management. Furthermore, it is only possible through formal and informal mechanisms that integrate, interprets and share knowledge anchored in either individuals or groups of individuals (Varajão et al, 2015).

Furthermore, Varajão et al (2015) provide an overview of formal transfer mechanisms by classifying it into four categories namely: personnel movement; use of tools; role assignment; and training.

- Personnel movement includes transferring an employee to a different department that develops an employee's communication skills and allows for a stronger network to be established within an organization.
- The use of tools includes information technologies, rules, procedures, reports and manuals which are employed by employees in the organization.
- In role assignment, particular mechanisms appeal to individuals to take on specific roles, such as knowledge broker or power user.
- Training permits the transfer of selected knowledge to one or more specific resources.

The management of knowledge in maximizing the potential of ERP systems has been advocated in the literature (Jeng & Dunk, 2013). For an organization to enable sustainable business performance, it's important to leverage on a knowledge management process will enable ERP end-users to systematically accumulate the relevant knowledge, refresh and rectify their available knowledge, and improve the impact of the ERP systems on business performance (Tsai et al, 2011).

According to Migdadi & Abu Zaid (2016) in their study of the top manufacturing and services organizations in China, the knowledge management impact was investigated on the organization's successful implementation of an ERP system. A considerable moderating effect on the relationship between knowledge management and business performance at post-implementation was confirmed in their study (Tsai et al, 2011).

The researcher concludes therefore that, the effect of post-implementation maintenance on business performance will be stronger in the presence of an effective knowledge management mechanism (knowledge storage and sharing). Profitability

was also found to be positively influenced by an effective knowledge management process (Inkinen, 2016)

Jeng and Dunk (2013) demonstrated in their study that organizations implementing ERP systems need to leverage their knowledge found internally to guarantee an implementation that is sustainable and successful. In their study apparel and footwear manufacturer in North and South America, they found that were enablers of knowledge (organizational culture, structure and IT support) were present there was an improvement in the overall knowledge creation that further improves the success with the ERP system.

2.7.8 Communication

According to (Dlodlo, 2011) the communication process should start early and should clarify the reasons why the organization implement an ERP system. Smuts et al, 2010 emphasized that communication can be a challenging task in any ERP implementation task. The organization will need employees to exercise teamwork as a sure dedication and care about the mission and vision of the organization (Lilienfeld, Marshall & Taylor, 2014). To ensure ERP implementation success, organizations are required to invest in developing the human capacity through extensive user training in ERP tools (Hanning, 2010 & Kalema et al, 2014).

2.7.9 Chapter Conclusion

From the provided literature it is evident that Enterprise Resource Planning (ERP) systems are essential to the company’s productivity, thus, companies' investment into ERP systems is motivated by the efficiency and streamlined business process the system brings to the company.

Moreover, the ERP systems have been effective in improving business performance because among other factors they simplify the work done by employees and while on the other end free the time of the staff to spent improving customer services which at the end will give the company a competitive urge over their competitors. In this light, the successful implementation of the ERP system leads to several benefits to companies such as cost reduction, improvement in productivity, strategic benefits, and managerial benefits.

The chapter also outlined the different ERP system post-implementation challenges highlighted by different scholars from previous studies, amongst the challenges was change management, user resistance, organizational culture, training requirements, operational disruption, business process reengineering, and knowledge sharing. The researcher used the above ERP system post-implementation challenges as a yardstick to validate the previous findings by the scholars in the topic researched and to build-up on the knowledge pool with new findings as a contribution to the current literature.

The discussed ERP post-implementation challenges also highlight the importance of up-front work as a good approach to eliminate ERP post-implementation challenges. More work must be done to address pre-implementation challenges and preparation towards the implementation of an ERP system which at the end brings a better outcome at the post-implementation stage.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter focuses on the research methodology used. The data gathering process, statistical methods used to analyse the data and the interpretation of the results are also discussed. Thus, the methodological framework used for this research study will be outlined in this chapter. The chapter further outlines the research aims and objectives, research approach and design, research philosophy and the strategy used. The chapter also discusses the quantitative analysis and its relevance to the study.

The chapter also looks at the research tool used, questionnaire design, sample techniques and the population targeted for the study. It also discusses the ethical consideration, data analysis and limitations for this study.

3.2 Research Design

This study employs a quantitative method of research as it comprises of present theory to develop hypotheses. Welman, Kruger, & Mitchell (2009) conclude that regarding scientific theories, positivism is concerned first and foremost with the creation of laws applicable to all people at all times. The laws so developed are used as the basis for testing the reliability of quantitative data collected.

Moreover, the developed self-administered questionnaire will then be scientifically tested, confirmed and that will lead to more development of the theory (Saunders, Lewis and Thornhill, 2009). Unlike in qualitative research design where the researcher does not know the variables, need to explore and learn more from participants (Creswell, 2012), positivists know the variable and use them to generate the pool of knowledge.

3.3 Research Approach

In research, the two main research approaches broadly acknowledged are qualitative and quantitative approaches (Saunders, Lewis and Thornhill, 2003). The purpose of collecting qualitative data is to build a compound, coherent and holistic picture of a

phenomenon studied (Sekaran, 2003). The data collection method for this approach is mainly through interviews, document analysis, field notes, and observations.

On the other hand, the quantitative approach is deductive where a hypothesis is developed and the research strategy is designed to test the hypothesis. It is an inquiry into an identified problem based on testing a theory, measured with numbers and analysed using statistical techniques. The deductive approach mainly utilizes quantitative data collection methods in the form of a questionnaire with close-ended questions.

Hussey and Collis (2007) substantiate that the quantitative method involves the use of numerical measurements and statistical analysis of measurements to examine social phenomena. The researcher considered the quantitative approach suitable for this study the relationship between ERP users and their experience in using an ERP system. A questionnaire was therefore used as a widely used data collection tool for this approach and suitable for this hypothesis based study.

3.4 Rationale for selecting a quantitative method

A quantitative approach allows the researcher to examine the relationship between variables. As the study comprised a number of variables, both dependent and independent, to test the hypothesis, the researcher considered a quantitative research approach relevant. According to the quantitative method of investigation, numbers are very crucial to achieve reliability in testing the pre-conceived theory (Lebaree, 2009). The purpose of using a quantitative approach is to evaluate objective data consisting of numbers to achieve high levels of reliability in terms of data analysis.

Because on the quantitative approach decided upon, a structured questionnaire with closed-ended questions was administered to all the targeted respondents. According to Dane (2000), quantitative methods include reviewing a significant amount of literature to provide direction for the research questions. Quantitative research is based on attempts to apply the methods to facilitate data analysis. Its strength is that it provides data that are easily quantifiable and based on reasonably objective evidence that lends itself to rigorous analysis.

Moreover, results can be reduced to numerical statistics and interpreted in short statements (Saunders, et al., 2003). A structured questionnaire (Annexure A) was administered to all the target respondents to determine the perceptions of ERP users on their experience in using the ERP system.

3.5 Research Strategy

This research has adopted a quantitative strategy by gathering a large number of data from employees of the identified FMCG company. The researcher concludes that coherence should exist between the nature of the study and the research method selected. Krishnaswami & Ranganatham (2007) corroborate that the quality of a research project depends, among the other things, upon the suitability of the method selected for it.

Quantitative analysis is a widely used research method and is expected to give positive results of the questionnaire. The chosen research strategy has different quantitative analysis methods such as statistics, graphs, and charts which allow the researcher to calculate the data more appropriately. The quantitative data analysis is the calculation of data through statistical techniques. A questionnaire is thus used for descriptive and explanatory research to collect a large number of responses from the participants to analyse the data.

The researcher has chosen a self administered questionnaire that is completed by respondents, managed electronically through Internet/ Intranet and collection. To meet the objectives of the research questions, the quantitative approach is undertaken as it provides all the numeric data that practically analyse the statistics collected and answer the questions (Saunders, et al., 2009). In this research, the researcher used the most up to date, reliable and valid scales to measure the quantities based on the literature review and research questions.

Due to the downfalls experienced in the post-implementation of the ERP system, the study at hand attempts to address challenges related to the post-implementation of the ERP system by companies.

3.6 Research Instrument

Research instruments refer to devices used to collect data such as questionnaires, tests, structured interview schedules and checklists (Mbambo, 2009). Mbambo (2009) also defines a questionnaire as “a method of gathering information from respondents about attitudes, knowledge, beliefs, and feelings”. The questionnaire was designed to gather information about the challenging in the post-implementation stage of implementing an ERP system by ERP users.

There are many instruments in the quantitative study, but the researcher selected to use a questionnaire which is the most appropriate instrument for data collection to be used for this study. The researcher used this technique as large data is collected from a big population of the identified FMCG Company from its different operations sites.

The questionnaire is a common method of data collection and every respondent is asked the same set of questions by a fixed technique (Saunders, et al., 2009). The researcher considered the Internet/Intranet as a suitable option to distribute and collect his questionnaires.

3.7 Questionnaire Design

Questionnaires are data collection instruments that enable the researcher to pose questions to subjects in his/her search for answers to the research questions. In this study, Likert scale was used to enable scores of either low or high values to represent the extent of the knowledge, opinion, judgment, and experience of the respondents with regard to the research phenomenon (Delport & Roestenburg, 2011).

A highly structured question format allows for the use of closed questions that require the respondent to choose from a predetermined set of responses or scale points. Blumberg, Cooper & Schindler (2005) state that a Likert scale format, on the other hand, involves the use of special rating scale that asks respondents to indicate the extent to which they agree or disagree with a series of mental belief of the statements about a given subject (strongly agree, agree, undecided, disagree and strongly disagree). The Likert scale was chosen because it facilitates robust statistical analysis.

3.8 Population and Sample

The population consists of groups, departments or individuals, which are appropriate for the research (Quinlan, 2011), but for this research, the target population was the employees from the identified FMCG company with operations across South Africa. The questionnaire was sent to a total of 85 respondents and 62 returned the completed questionnaire. Quinlan (2011) defines a sample as a small subgroup of the population.

Due to the enormous size of the identified FMCG company workforce, this research could not be carried out using the entire population. Furthermore, since not all employees are ERP users they were not sampled. The researcher thus considered the sample population to be a suitable technique as it is an effective approach to collect data instead of using the entire population and specifically when there is time and requirements are limited for the researcher. The researcher used a purposive sampling method to determine the sample (Quinlan, 2011).

The sampling method was also dictated by the type of survey sample sought to answer the research question. The researcher thus sampled using his judgment to select specific units to be included in the sample. Purposive or judgment samples can provide valuable information particularly in the early stages of an investigation (Lohr, 2009).

3.9 Ethical Consideration

Ethical conduct can be described as moral values, confidentiality, and anonymity of an individual, group or company (Quinlan, 2011). Confidentiality and anonymity usually refer to the assurance that the researcher gives to the participants that their identity and involvement in research will be kept confidential.

This study the participants were notified of the confidentiality of their responses and anonymity of their identity; also, they were informed about the nature of this research and why it is carried out, moreover they were made aware of what is required from them as a participant. All information about participants were treated with confidentiality and the participants were anonymous (Saunders, et al., 2003). A covering letter (Annexure B) also assured the respondent that all responses would be treated with the utmost confidentiality and anonymity.

In this study, no attempt was made to harm participants deliberately and those who could experience any form of harm be it through victimization, emotional or otherwise, were informed in advance of their right to withdraw from participating in the study. All the ethical codes were followed while completing the research.

3.10 Data Collection

Saunders (2003) states that questionnaires are data collection instruments that enable the researcher to pose questions to subjects in his/her search for answers to the research questions. According to Quinlan (2011) “The data gathering methods are designed in such a way as to ensure that they will yield the data required”.

The questionnaire was emailed to respondents to get the opinions and viewpoints of the ERP users as the relevant target for this study. The researcher developed a questionnaire in which all the questions were administered electronically and provided to the targeted respondents through email. The questionnaire was distributed to all 85 respondents however 62 ERP users responded from all the operational sites.

3.11 Data Analysis

Sarantakos (2000) describes data analysis as data that is statistically analysed to determine whether the generated hypotheses have been supported. In this research, data collected was to give scientific support that there are ERP system post-implementation challenges experienced by ERP system users. The questionnaires were collected and counted to ensure that all respondents had answered and completed the questions. The main aim of this analysis is to provide the exact measures of the research primary objective of investigating the challenges at the post-implementation stage of ERP system.

The returned questionnaires were coded and captured on the computer. The data were analysed using Statistical Package for the Social Sciences (SPSS). The SPSS tool helps analyse a large set of survey data. De Vos, Strydom, Fouche, & Delport (2007) describe data analyses as the process of bringing order, structure, and meaning to the mass of collected data. The service of the North-West University statistician was used to analyse the statistical information. When the questionnaire

was completed by all the participants, then the package was used to analyse the data (Quinlan, 2011).

Accurate scales were used to correctly measure all research questions in this paper according to their validity and reliability. The scaling technique is used extensively to measure the quantitative facts. Descriptive analysis of the statistically analysed data was used for the findings and results of the data collected and it is described by graphs, pie charts, and numerical tables.

The graphical technique is recognized for identifying an aspect of the large quantities of data. The numerical tables and charts give accurate quantified data. This descriptive method is feasible for the reader to understand the findings and it is examined and discussed in the next chapter.

3.12 Limitation

This researcher has tried to provide an understanding of the ERP users at the identified FMCG Company. Although some limitations exist, the main ones are time constraints and sample size, therefore an online questionnaire was carried out to collect the data from the existing employees from 5 different operations from the identified FMCG Company.

The study is limited to one FMCG company with various operations in South Africa. The first factory situated in the North-West province, the second factory situated in the Gauteng Province, third factory situated in the Kwazulu Natal Province, the fourth factory situated in the Eastern Cape and the last factory situated in the Western Cape province. The measurement of perceived success in one FMCG company might be different from the next, due to company-specific challenges. Care should, therefore, be exercised in the interpretation and utilization of the results, thus its findings cannot be generalized. It is possible that some respondents might have experienced some difficulties with the interpretation of the questionnaire.

3.13 Chapter Conclusion

The quantitative research design was chosen as the relevant research approach for this study. The target population comprised of ERP users from the 5 operations of an

identified FMCG company in South Africa. The sample size consisted of 85 ERP users and a total of 62 responses was obtained. The researcher is aware that the research would only be generalizable to this particular company and possibly similar companies within the FMCG industry.

This research investigated factors contributing to ERP system post-implementation challenges at the identified FMCG Company and provided recommendations to remedy the problem for only those specific operations. This is a general topic on ERP system post-implementation challenges experienced by users and thus this research can also benefit other companies that encounter similar problems. The next chapter focuses on the analysis of the results and discussion of the findings.

CHAPTER 4: PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

4.1 Introduction

This chapter presents the analysis of the data obtained from the respondents through the questionnaires administered to ERP users at the chosen FMCG Company. It provides further insight into the research propositions introduced in Chapter three. The statistically analysed data is given in order to address the research objectives presented earlier in chapter one to facilitate the developments of research findings and contribute to the body of knowledge.

4.2 The questionnaire

The first part of the questionnaire comprises of demographics which includes the ERP end-user's position, how long have they been working for the company, previous ERP systems experience and their computer skills. These questions helped in analysing the data as it illustrated the viewpoint of the targeted respondents.

The second part of the questionnaire includes the reasons on a Likert scale on seven constructs which are change management, training requirements, user perception, culture, communication and knowledge sharing, business process reengineering and operational disruption. The researcher derived the constructs informed by the research questions and guided by the challenges discussed in the literature review. A questionnaire with closed-ended questions was provided to the respondents with options to select on a scale of five (5) options measured on a Likert scale. The Likert scales are technique of rating scales and are used to collect the belief and attitude of the respondents towards the statements (Quinlan, 2011).

The researcher used the term SAP instead of the term ERP system in the questions because the respondents relate more with SAP as a type of ERP system. This change was to make sure that there is no misunderstanding. In Section 4.2 is the full questionnaire that was distributed to the responded to draw a good introduction of the presentation, analysis and interpretation of the result.

4.3 Results

4.3.1 SECTION A: Descriptive Analysis

Section A: Results of demographic information

The total number of questionnaires distributed to respondents was 85 (Eighty-five). A total of 62 (Sixty-two) out of the total of 85(Eighty-five) questionnaires distributed were completed and returned which constitutes 73% (Seventy-three percent) response rate.

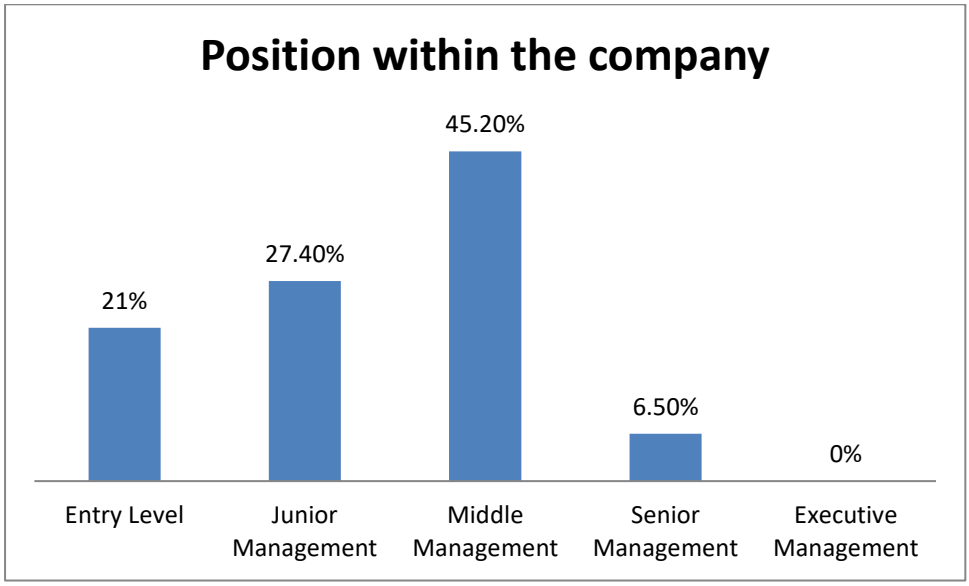
The demographic information was collected from the respondents in five operational sites of an FMCG company. The sample is believed to be a fair representation of the demographics of the industry without bias in terms of the user's position within the company, years of service, the experience of working on the ERP system with the previous employer(s) and level of computer skills. Some respondents, however, failed to return their completed questionnaires to the researcher and hence the inconsistencies in numbers per some biographical variables.

This subsection was meant to determine the number of respondents in terms of their position in the company. Respondents completing the questionnaire needed to indicate their position from 5 (five) categories as per hierarchy indicated in the table below.

Table 4.1: Which best describes your position within the company?

Position	Frequency	%
Entry Level	13	21
Junior Management	17	27.4
Middle Management	28	45.2
Senior Management	4	6.5
Executive Management	0	0
Total	**N = 62**	**100**

Figure 4.1: Position within the company



Respondents in this study consisted of 13 employees making 21% at entry-level, 17 making 27.4% at a junior level, 28 making 45.2% and 4 making 6.5% of the total study sample of 62 employees.

Therefore it indicates that the majority of the respondents are in Middle Management at 45.2% followed by junior management at 27.4% then entry-level at 21%. Employees between Middle Management, Senior Management, and Executive Management will be considered as senior employees and Entry Level and Junior Management as junior employees for this study.

Table 4.2 indicates the years of experience the respondents have with the company.

Table 4.2: How many years of service do you have with the company?

Service	Frequency	%
Less than 3yrs	14	22.6
3 - 5yrs	18	29
6 - 10yrs	18	29
11 - 15yrs	4	6.5
16yrs and above	8	12.9
Total	**N = 62**	**100**

Figure 4.2: Service with the company

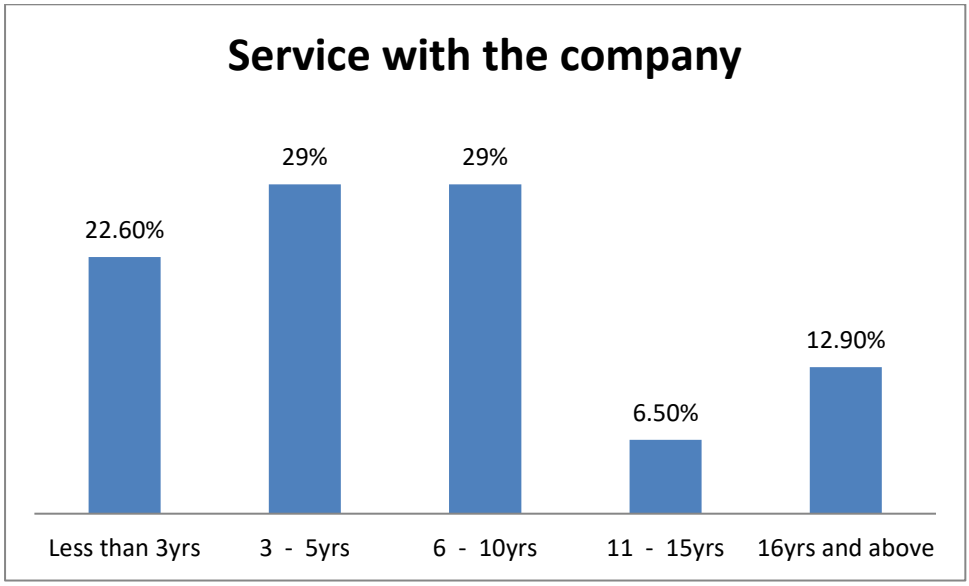


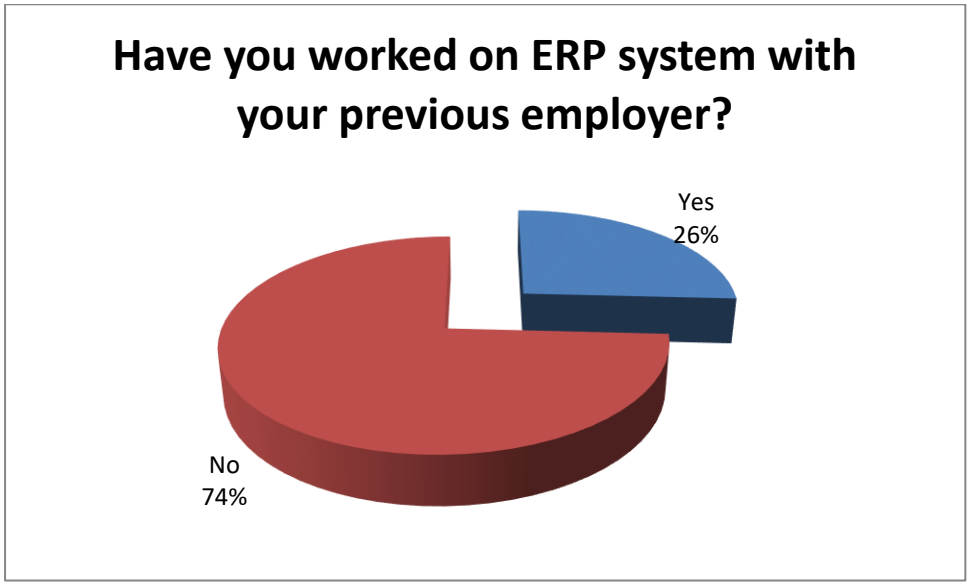
Figure 4.2 measured the respondents' years of service within the company. The results show that the majority of the respondents between 3-5years and 6-10years had 29% (Twenty-nine per cent), 22.60% (Twenty-two per cent) had less than 3 years, 12.90% had 16 years and above, and 11-15 years trailing with 6.5% years of service within the company.

This subsection seeks to determine the number of respondents with an ERP system's previous experience.

Table 4.3: Have you worked on ERP system with your previous employer?

Have you worked on ERP system with your previous employer?	Frequency	%
Yes	16	25.8
No	46	74.2
Total	**N = 62**	**100**

Figure 4.3: Have you worked on ERP system with your previous employer?



The above results in figure 4.3 show that a total of 46 respondents making 74% of the respondents has not worked on an ERP system with their previous employers and a total of 16 respondents making 26% of the respondents has worked on the ERP system with their previous employers.

This subsection seeks to generally determine the respondents' computer skills. Respondents completing the questionnaire were requested to rate their skills between 5 categories namely, very poor, poor, fair, good and very good.

Table 4.4: How would you rate your computer skills?

How would you rate your computer skills?	Frequency	%
Very Poor	0	0
Poor	0	0
Fair	7	11.3
Good	39	62.9
Very Good	16	25.8
Total	**N = 62**	**100**

Figure 4.4: How would you rate your computer skills?

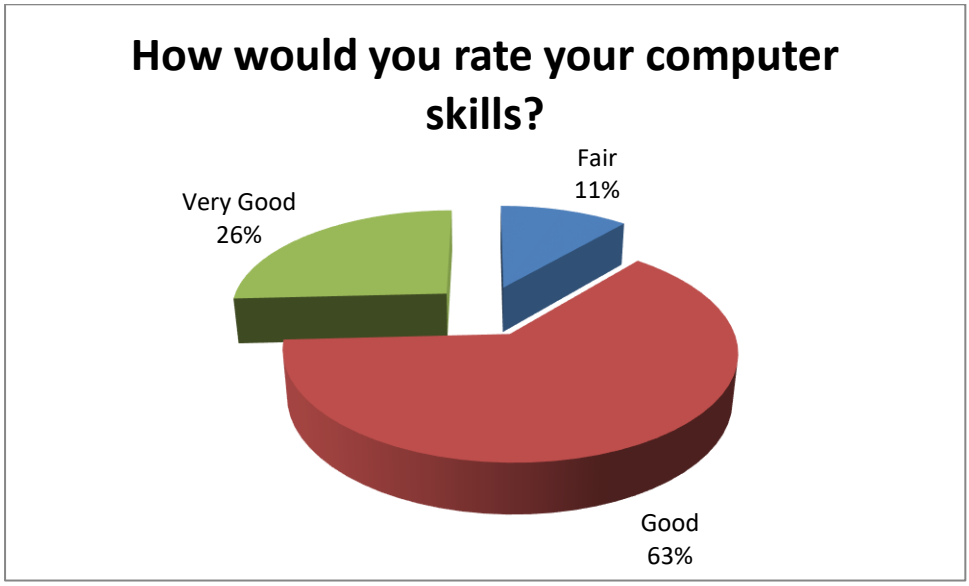


Figure 4.4 above presents the results of how the respondents rated their computer skills. A total of 39 respondents making 63% (Sixty-three percent) of the respondents rated their computer skills as being Good, followed by a total of 16 making 26%(Twenty-six percent) of the respondents rating their computer skills as being very Good, a further total of 7 making 11% (Eleven per cent) rated their computer skills as being Fair and lastly, no respondent has rated their computer skills as being poor.

4.3.2 SECTION B: Reliability Analysis

To test the reliability of the data collection instrument, Chronbach's alpha and inter-correlation items were used. Cronbach's Alpha tests for internal consistency by measuring the degree to which instrument items are homogeneous and reflect the same underlying construct (Cooper and Schindler 2011). According to Bonett and Wright (2015), Cronbach's Alpha(α) reliability coefficient is a statistical measure widely used by different authors in science education to demonstrate the tests or scales that have been constructed for a research project is reliable. The researcher, therefore, used the Cronbach Alpha coefficient calculations to assess the internal consistency and the reliability between the statements in the research instrument.

The Cronbach Alfa coefficient is an index that indicates the degree to which all the items as measured and tested, measures the same attribute (Struwig & Stead, 2004). The coefficient is based on the correlation of variables. A greater value (close to 1) for

Cronbach's alpha reliability coefficient indicates a higher consistency and improved reliability. Those subscales whose Cronbach's alpha reliability coefficients are less than 0.7 were not considered as they are considered insignificant.

Table 4.5: Reliability analysis

Subscale	Cronbach's Alpha (α)	N of Items	Mean	Standard Deviation	Internal consistency
Change Management*	0.715	4	3.03	0.6	Acceptable
Training Requirement	0.857	9	3.35	0.34	Good
User perception	0.561	4	3.98	0.24	Poor
Culture	0.641	2	3.76	0.14	Poor
Communication and Knowledge Sharing	0.741	4	3.69	0.15	Acceptable
Business Reengineering	0.404	2	3.99	0.08	Poor
Operational Disruption	0.495	3	3.26	0.40	Poor
Total	**0.876**	**17**	**3.36**	**0.43**	Good

*Items 2.1, 2.2, 2.4, 2.5, 2.7, 2.8 and 2.9 in item 2 of the questionnaire were removed from the subscale in order to increase the reliability coefficient, and therefore, they will no longer be considered in this study.

Subscales whose Cronbach alpha reliability coefficients are less than 0.7 in Table 4.5 are considered to be insignificant and those are user perception, culture, business process reengineering and operational disruption which were not considered in this study. The reason why these subscales scored Cronbach alpha reliability coefficients of less than 0.7 could be that the study sample is too small to draw good statistical conclusions from those subscales. The researcher views the sample size as one possible cause for the lower reliability on those subscales and believes given the larger sample these subscales' Cronbach alpha reliability coefficients could prove statistically significant.

4.3.3 SECTION C: Distribution of Results

Table 4.6 presents the responses to the questions relating to Change Management as a challenge in the Post-Implementation stage of ERP system. The respondents were requested to respond to four statements.

Key: SD = Strongly Disagree, D = Disagree, U = Undecided, A = Agree, SA = Strongly Agree

Table 4.6: Change Management

Change Management						
	Item	**SD (%)**	**D (%)**	**U (%)**	**A (%)**	**SA (%)**
2.3	My workload decreased as a result of the new ERP system.	11.3	43.5	16.1	25.8	3.2
2.6	My responsibilities decreased after the implementation of ERP system.	16.1	48.4	19.4	12.9	33.2
2.10	I received enough technical support after the implementation of the new ERP system.	4.8	19.4	17.7	45.2	12.9
2.11	I knew exactly whom to contact if I needed technical support on the new ERP system.	6.5	8.1	12.9	59.7	12.9

They were asked to rate each item on a scale of 1 to 5 (1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Strongly Agree, 5=Agree). Accordingly, 54.8% (43.5%&11.3%) of the respondents indicated that their workloads decreased as a result of the new ERP system. A total of 64.5% (16.1%&48.4) disagreed that their responsibility decreased post-implementation of the ERP system. The respondents were happy with the technical support received which is highlighted by a score of 58.1% (45.2 &12.9), furthermore, a score of 72.6% (59.7&12.9) indicated that they knew exactly whom to contact for technical support.

Table 4.7: Training Requirement

Training Requirement						
	Item	**Very Poor(%)**	**Poor(%)**	**Fair(%)**	**Good(%)**	**Very Good(%)**
3.1	The level of training provided before the ERP system implementation was:	3.2	17.7	38.7	35.5	4.8
	Item	**SD(%)**	**D(%)**	**U(%)**	**A(%)**	**SA(%)**

Training Requirement						
	Item	**Very Poor(%)**	**Poor(%)**	**Fair(%)**	**Good(%)**	**Very Good(%)**
3.2	The training conductors were knowledgeable about the ERP system	0	1.6	51.6	40.3	6.5
3.3	I am satisfied with the training on the new ERP system that was given prior to implementation of the ERP system.	1.6	27.4	19.4	45.2	6.5
3.4	The practical part of the training helped to increase my understanding of ERP system.	0	19.4	11.3	56.5	12.9
3.5	The training content provided during the ERP training covered all my training requirements.	6.5	33.9	21	33.9	4.8
3.6	The training manuals provided during the ERP training were easy to follow.	0	16.1	8.1	59.7	16.1
3.7	The time allocated for ERP training was sufficient to cover all the content for the training.	4.8	38.7	17.7	30.6	8.1
3.8	I would have preferred a second round of training after implementation of ERP system.	0	9.7	17.7	51.6	21
3.9	ERP system training was provided at the right time before ERP implementation to prepare me for the system.	1.6	37.1	24.2	33.9	3.2

Table 4.7 presents the response to the questions relating to training requirements as a challenge in post-implementation of ERP system. The respondents were presented with a series of statements around the conductor's knowledge about ERP systems,

training material, training content, the timing of the training, and the need for second refresher training. The first question from the total of nine requested the respondent to rate their response to the statement about the level of training provided before the new ERP system which was scaled using (1=Very Poor, 2=Poor, 3=Fair, 4=Good, 5=Very Good), the result then indicated that 40.3%(35.5&4.8) rated the level of training as being high while 38.7 per cent rated the level of training as being acceptable.

The remaining eight statements were rated on a scale of 1 to 5 (1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Strongly Agree, 5=Agree). The first statement was about the training conductor's knowledge with ERP system and the result indicated that 46.8% (40.3&46.5) agrees that the training conductors were knowledgeable about ERP systems while 51.6% respondent were undecided. The second statement gathered the respondent's view about the level of satisfaction the training provided before the implementation of an ERP system. The result presents that 51.7% (45.2&6.5) respondents were satisfied with the training that was provided while 19.4 were undecided. The third statement intended to gather information about the respondent's view of using the practical examples to increase the user's understanding and the result highlighted that 69.4% (56.5&12.9) agrees that the practical part of the training enhanced their understanding of ERP system. The fourth statement gathered the information about whether the training content covered the respondent's training requirement and the resulted indicated that 40.4% (33.9% & 6.5%) posit that the content didn't cover all their training needs while 38.7%(33.9&4.8) indicated that the training content covered all their training requirements. The fifth statement was about whether the training manuals provided for the training were easy to follow and the result indicated that 75.8% (59.7% & 16.1%) that training manuals were easy to follow. The sixth statement was about whether the time allocated for training was sufficient to cover all the training content and the result indicated that 43.5% (38.7&4.8) respondent said that the time allocated was not enough while 38.7% (30.6&8.1) said that the time allocated was enough to cover the content of the training. The seventh statement gathered the information about the respondent preference of having a second training after implementation of ERP system and the result indicated that 72.6% (51.6% & 21%) wanted the second training after the Implementation to increase their understanding of the system. The last statement was intended to gather information on whether the training was provided at the right time before

implementation and the result indicated that 38.7%(37.1&1.6) respondents were not happy with the time the training was provided while 37.1 were happy about the time the training was provided.

Table 4.8: Communication and Knowledge Sharing

Communication and Knowledge Sharing						
	Item	**SD(%)**	**D(%)**	**U(%)**	**A(%)**	**SA(%)**
6.1	Management keeps track of the activities in the company due to ERP system implementation.	0	4.8	19.4	56.5	19.4
6.2	During implementation of ERP, the management communicated with me regularly about the progress on ERP system implementation.	1.6	6.5	22.6	59.7	9.7
6.3	Information is shared within the company about solutions for ERP system challenges.	0	19.4	9.7	62.9	8.1
6.4	I have seen greater level of knowledge sharing about ERP system between different departments or different business units.	0	19.4	14.5	56.5	9.7

Table 4.8 presents the response to the statements relating to Communication and Knowledge Sharing as a challenge in post-implementation of ERP system. The respondents were requested to respond to three statements thereon. They were asked to rate each item on a scale of 1 to 5 (1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Strongly Agree, 5=Agree). Accordingly, 75.9% (56.5&19.4) indicated that management keeps track of the activities in the company due to the implementation of an ERP system. The results from the data highlighted that 69.4% of responded confirms that the management regularly communicated with them about the progress of ERP system implementation throughout the lifecycle of the ERP system project. The respondent's views about information sharing presenting a solution for ERP systems challenges is evident from 71% (62.9&8.1) indicated that the respondent has seen a greater knowledge sharing of the solution to address the ERP system challenges. The last statement also supports with a score of 66.2% (56.5&9.7) that

there was a greater level of knowledge sharing amongst different departments or different business units.

4.3.4 SECTION D: Descriptive Statistics

Positive skewness values show that the respondents tend to disagree with the items listed in Table 4.9, 4.10 and 4.11, whereas negative skewness values imply that the respondents tend to agree with the listed items. The values of the mean closer to 4 show that the respondents tend to agree with the items listed in Table 4.9, 4.10 and 4.11. Mean values that are closer to 3 indicate that the participants tend to be not sure about those items in Table 4.9, 4.10 and 4.11. Low standard deviations indicate that the responses are clustered closer to their respective means (averages).

Table 4.9: Change Management

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree

Change Management					
	Item	**N**	**Mean**	**Standard Deviation**	**Skewness**
2.3	My workload decreased as a result of the new ERP system.	62	2.66	1.09	0.32
2.6	My responsibilities decreased after the implementation of ERP system.	62	2.39	1.01	0.71
2.10	I received enough technical support after the implementation of the new ERP system.	62	3.42	1.09	-0.52
2.11	I knew exactly whom to contact if I needed technical support on the new ERP system.	62	3.65	1.03	-1.21

The data presented shows that the respondents disagreed that their workload and responsibilities decrease as a result of the implementation of the new ERP system supported by a positive skewness of 0.32 and 0.71, a mean of 2.66 and 2.39 which closer to 3 and the standard deviation of 1.09 and 1.01. Furthermore, the respondents agreed that they received enough technical support and they knew exactly whom to

contact for technical support during the implementation of a new ERP system which is supported by the negative skewness of -0.52 and -1.21, mean 3.42 and 3.65, standard deviation 1.09 and 1.03 respectively.

Table 4.10: Training Requirement

Training Requirement					
	Item	**N**	**Mean**	**Standard Deviation**	**Skewness**
3.1	The level of training provided before the ERP system implementation was:(very poor, poor, fair, good, very good)	62	3.21	0.91	-0.30
3.2	The training conductors were knowledgeable about the ERP system	62	3.52	0.65	0.50
3.3	I am satisfied with the training on the new ERP system that was given prior to implementation of the ERP system.	62	3.27	0.99	-0.27
3.4	The practical part of the training helped to increase my understanding of ERP system.	62	3.63	0.94	-0.63
3.5	The training content provided during the ERP training covered all my training requirements.	62	2.97	1.07	-0.02
3.6	The training manuals provided during the ERP training were easy to follow.	62	3.76	0.92	-0.81
3.7	The time allocated for ERP training was sufficient to cover all the content for the training.	62	2.98	1.11	0.18
3.8	I would have preferred a second round of training after implementation of ERP system.	62	3.84	0.87	-0.60
3.9	ERP system training was provided at the right time before ERP implementation to prepare me for the system.	62	3.00	0.96	0.12

The data presented shows that the respondents disagreed that the training conductor was knowledgeable about the new ERP system supported by the positive skewness of 0.50, a mean of 3.52 and a standard deviation of 0.65. The respondents also disagreed that the time allocated for training was sufficient to cover all their training requirement with the positive skewness of 0.18, mean of 2.98 and standard deviation

of 1.11. Further, the respondents disagreed that the training was provided at the right time before implementation to prepare them for the new ERP system this was also supported by the positive skewness of 0.12, a mean of 3.00 and a standard deviation of 0.96.

The respondents rated the level of training good meaning that they were satisfied with the training provided before the implementation of the new ERP system evident by a negative skewness -0.30 and -0.27, Mean of 3.21 and 3.27, and a standard deviation 0.91 and 0.99 respectively. The data evidence show that the respondents agreed that the training manuals provided during the ERP system training were easy to follow, the training content provided during training covered all their training requirement and the practical part of the training helped them increase their understanding of the ERP system. The analysis is supported by a negative skewness of 0.81, 0.02 and 0.63, a mean of 3.76, 2.97 and 3.63 with a standard deviation of 0.92, 1.07 and 0.94 respectively. The data presented shows that the responded would have preferred to have a second training after implementation of ERP system supported by the negative skewness of -0.60, a mean of 3.84 and a standard deviation of 0.87.

Table 4.11: Communication and Knowledge Sharing

Communication and Knowledge Sharing					
	Item	**N**	**Mean**	**Standard Deviation**	**Skewness**
6.1	Management keeps track of the activities in the company due to ERP system implementation.	62	3.90	0.76	-0.52
6.2	During implementation of ERP, the management communicated with me regularly about the progress on ERP system implementation.	62	3.69	0.80	-0.96
6.3	Information is shared within the company about solutions for ERP system challenges.	62	3.60	0.90	-0.80
6.4	I have seen greater level of knowledge sharing about ERP system between different departments or different business units.	62	3.56	0.92	-0.59

The data presented shows that the respondents agree that management keeps track of the activities in the company due to ERP system implementation which is supported by negative skewness of 0.52, a mean of 3.90 and a standard deviation of 0.76. The respondents also agreed that the management communicated with them regularly about the progress ERP system implementation with a negative skewness 0.96, a mean of 3.69 and a standard deviation of 0.80. The respondent also confirmed that information was shared within the company about the solutions to the ERP system challenges and they have seen greater knowledge sharing from different department/business units this was evident by negative skewness of 0.80 and 059, mean of 3.60 and 3.56 and standard deviation of 0.90 and 0.92 respectively.

4.3.5 SECTION E: Correlation Analysis

4.3.5.1 Spearman's rank rho test

Many scholars define Spearman's correlation coefficient as Pearson's correlation coefficient between rank variables, however, Pearson's correlation coefficient provides a description of how well the relationship between variables can be described using a linear function which makes it irrelevant for this study (Rebekic, Loncaric, Petrovic and Maric, 2015:1)

Spearman's correlation coefficient is adopted for this study due to its statistical significance for different sets of data received from the ERP questionnaire circulated in my organization. The following section will focus on the definition and also highlight the relevance of Spearman's correlation coefficient in analysing the data in this study.

4.3.5.2 Definition and relevance of Spearman's rank correlation coefficient

Spearman's rank correlation coefficient is a nonparametric (which refers to "distribution-free") rank statistic which was suggested by Charles Spearman as a tool to measure the strength of an association between two variables, thus, it is used as a measure of a monotone association commonly when the distribution of data makes Pearson's correlation coefficient misleading (Hauke & Kossowski, 2011:92).

According to Rebekic, Loncaric, Petrovic and Maric (2015:1) Spearman's rank correlation is one of the most widely applied correlation coefficients, additionally, Spearman correlation provides an evaluation of how well the relationship between two variables can be described with the application of the monotonic function.

According to Hauke & Kossowski (2011:92) Spearman's coefficient should not be confused with a measure of the linear relationship between two variables because it evaluates how well an arbitrary monotonic function can best describe the relationship between two variables avoiding any assumptions about the frequency distribution of the variables

Spearman's coefficient varies from Pearson's product-moment correlation coefficient as it does not necessitate the assumption that the relationship between the variables is linear and also it does not necessitate the measuring of variables on interval scales, however, Spearman's coefficient can be used for variables that are measured at the ordinal level (Hauke & Kossowski, 2011:92).

This test is concerned with the correlation between two ranked variables (X and Y). The correlation is statistically significant if the p-value is less than 0.05 level of significance. The coefficient of Spearman's rank correlation is given by

$$r = 1 - \frac{6\sum D^2}{N(N^2-1)}$$

where

D = differences of ranks of corresponding values of X and Y
N = number of paired values in the data
$-1 \leq r \leq 1$

Table 4.12: Spearman's rank correlation between position within the company and views (perceptions) of employees about the ERP system.

Items	Correlation coefficient (r)	p - value
I knew exactly whom to contact if I needed technical support on the new ERP system. (N = 62)	-0.300	0.018

The level of training provided before the ERP system implementation was:(very poor, poor, fair, good, very good) (N = 62)	-0.254	0.046
The training conductors were knowledgeable about the ERP system (N = 62)	-0.252	0.048
I am satisfied with the training on the new ERP system that was given prior to implementation of the ERP system. (N = 62)	-0.334	0.008
The practical part of the training helped to increase my understanding of ERP system. (N = 62)	-0.399	0.001
The time allocated for ERP training was sufficient to cover all the content for the training. (N = 62)	-0.374	0.003
ERP system training was provided at the right time before ERP implementation to prepare me for the system. (N = 62)	-0.254	0.047
Information is shared within the company about solutions for ERP system challenges. (N = 62)	-0.328	0.009

SPSS 25 software package was used to perform the correlation analysis and the results are shown in Table 4.12. Since all the p-values are less than 0.05 level of significance, then the correlation between the position within the company and views of employees about the items listed in Table 4.12 is statistically significant. The negative correlation coefficient ($r < 0$) means that employees in the lower positions tend to agree with the items in Table 4.12, whereas employees in higher positions tend to disagree.

Data analysis shows a significant negative correlation of -0.300 between the views of employees in the senior roles and junior roles. Employees in the senior roles assert they do not know whom to contact if they needed technical support on the new ERP system while those in junior roles purports to have people to contact for technical support on the new ERP system. The researcher concludes that junior employees have the senior employees for technical support on the ERP system while the senior employees with the most experience to mentor the junior employees also in need of technical support on the ERP system. Therefore it implies that any challenge on the ERP system which cannot be addressed by senior employees will remain and might

impact on the general productivity of the organization. The senior role employees are sometimes reliant on the consultant hired to assist with implementation of the system and when the implementation is complete they leave the company for another project which takes away the support the senior employees only had.

Similarly, a negative correlation of -0.254, where senior employees perceive the level of training provided before the implementation of the ERP system as poor while junior employees posit it was good poses a challenge in the organization. The researcher postulates that if mentors consider the training poor, chances are that ensuring implementation would also be poor as they are the ones in the lead as the most experienced in terms of their seniority.

In the same vein, as senior employees perceived the training to be poor, they apportion blame on the poor knowledge of the ERP training conductor. However, the junior employees perceived it otherwise hence a negative correlation of -0.252. The researcher considers the perception of the senior employees as conclusive because they are the ones in the lead in any organization. If the trainers are not knowledgeable, the trainees are bound to make mistakes and that could lead to a catastrophic situation costing the company enormous losses.

Owing to the unsatisfactory level of training, insufficiently knowledgeable training conductors, the senior employees indicated dissatisfaction with the ERP training offered before implementation, while their junior counterpart showed satisfaction hence a negative correlation of -0.334.

Furthermore, the senior employees were dismissive of the practical part of the training in terms of increasing their understanding of the ERP system. On the other hand, employees at junior level valued the practical training offered hence a negative correlation of -0.399. Poor practical training translates to poor system implementation and therefore if those in senior roles feel scantly trained then implementation would be disastrous.

The senior employees also attribute the failure of the ERP system training prior to implementation to the under allocation of time. They consider time allocated very limiting and insufficient in terms of the training content coverage and the pecuniary

scope of work entailed. The junior employees were content with the time allocation, therefore, differing with those in the senior roles hence a negative correlation of -0.374.

Also, the senior employees are not satisfied with the timing of the ERP system training while the junior employees consider it well timed to prepare them for the system implementation hence a negative correlation of -0.254

Senior employees dispute that there is no knowledge sharing in the company about the solution for the ERP system challenges hence they indicated in one construct that they do not know who to contact if they needed support. Their junior counterparts, however, perceive the information to be sufficiently shared within the company hence a negative correlation of -0.328.

Figure 4.5: Views of respondents versus position within the company ($r < 0$)

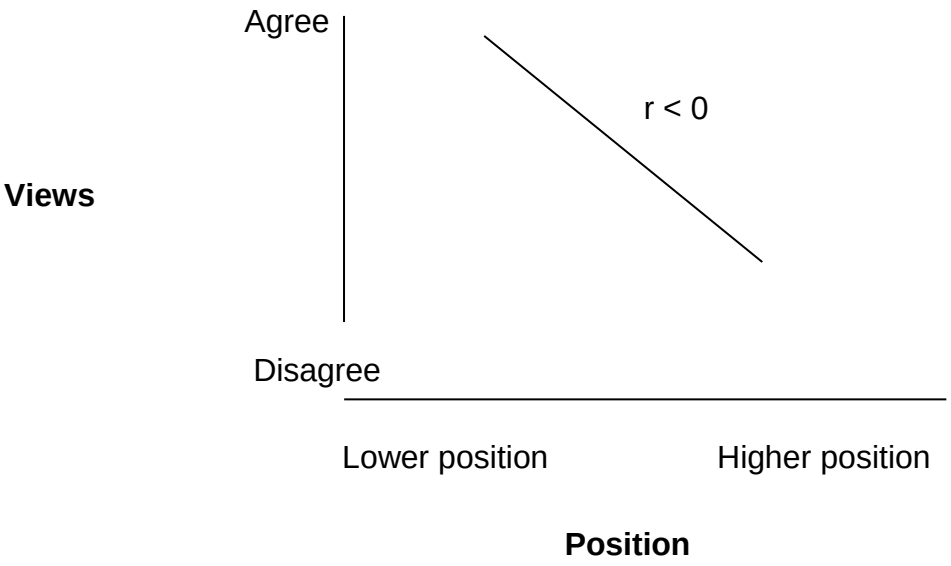
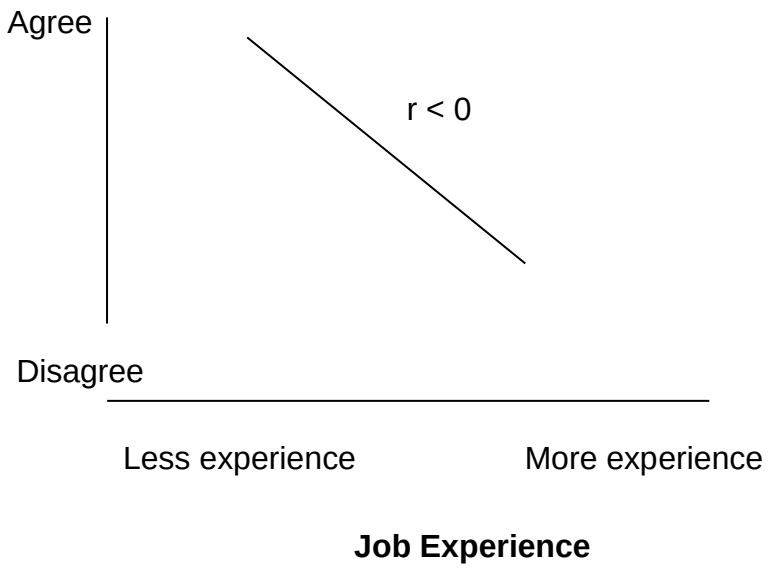


Table 4.13: Spearman's rank correlation between job experience within the company and views (perceptions) of employees about the ERP system.

Items		
I knew exactly whom to contact if I needed technical support on the new ERP system. (N = 62)	Correlation coefficient (r)	-0.273
	p - value	0.032
Management keeps track of the activities in the company due to ERP system implementation. (N = 62)	Correlation coefficient (r)	-0.252
	p - value	0.048

Since all the p-values are less than 0.05 level of significance, then the correlation between job experience within the company and views of employees about the items listed in Table 4.13 is statistically significant. The negative correlation coefficient ($r < 0$) means that less experienced employees tend to agree with the items in Table 4.13, whereas more experienced employees tend to disagree.

Figure 4.6 Views of respondents versus job experience within the company ($r < 0$)



4.3.6 SECTION F: T - Test between two Independent Samples

The purpose of the t-test is to compare the average responses of the two populations. Samples are selected randomly from these populations and the variances of the population's responses are assumed to be equal. The population's responses are also assumed to be normally distributed. The difference of opinions (views) between the two populations is statistically significant if the p-value is less than 0.05 level of significance.

Table 4.14: Two-Sample T Test

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree

Item	Position within the company	Sample Size	Mean	p-value	Comment
I am satisfied with the training on the new ERP system that was given prior to implementation of the ERP system.	Higher position Lower position	32 30	2.94 3.63	0.005	Significant difference, p-value < 0.05

The statistical software package (SPSS 25) was used to perform a t-test between two position groups: lower position (junior management and below) and higher position (middle management and above) in Table 4.14. Since the p-value is less than 0.05 level of significance, it means that there is a significant difference in perceptions between the two position groups. The mean score for the respondents in the lower position is higher than those of the respondents in the higher position on the Likert scale. This result shows that the employees in the lower positions tend to agree, whilst the employees in the higher position tend to slightly disagree with the item in Table 4.14.

4.4 Chapter Conclusion

T-tests were used to analyse the relationship between the perceptions of the two groups, the employees in the senior roles and employees in the junior roles

The correlation between employees in the senior roles and those in the junior roles is interesting because in most constructs these reveal a negative correlation. These suggest that the views of one group of respondents are contrary to those of the other group about the same constructs. These groups had different perceptions on issues such as technical support on the ERP system (-0.300), the level of training (-0.254), knowledge of training facilitators (-0.252), practical part of the training (-0.399), time allocation (-0.374), scheduling of the ERP training (-0.254) and knowledge sharing -0.328. In a nutshell, the employees holding senior roles, believed to be those extensively knowledgeable about the company's operations perceive the ERP system training to be marred with many challenges which are very evident in the post-implementation stage however borne in the inception of the ERP system training.

The results in this chapter indicate that challenges in the training and training inputs cascade down to implementation. The training as a once off event does not cater for challenges encountered post-implementation. The next chapter, therefore, moves on to discuss the findings and make recommendations of findings discussed.

CHAPTER 5: DISCUSSION OF FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

5.1 Introduction

The previous chapter dealt with the presentation of data and analysis of findings to answer the research questions of the study. The focus of this chapter is the summary of findings based on the research, recommendations derived from the study and conclusion. The chapter also presents the limitation and strengths of the study. The purpose of the study was to investigate the challenges in the Post-Implementation stage of ERP system at an identified FMCG company. The findings and recommendations presented in this study used the research question: What are the challenges in the post-implementation stage of ERP system?

5.2 Discussion of findings

In this chapter, the following findings are discussed against the backdrop of the reviewed literature:

Scheduling of the ERP training

The respondents were not satisfied with the timing of the training that was provided before the ERP system implementation. Soja and Paliwoda-Pekosz (2009) claimed that an inappropriate schedule of training negatively impacts the implementation of the ERP system. Substantiating this argument, Welti (1999) & Gupta (2000) state that some companies schedule their training programs too long before the ERP system implementation and by the time the system end-users start working on the system they have forgotten about the training. Aligning with Welti (1999) & Gupta (2000), McAlary (2000) postulates that training can take place as late as two weeks before the beginning of the implementation cycle that deals with the trainee's domain. The premise is that the end-users would still be fresh from training and will find it easy to implement the new ERP system concepts they learned.

Time allocation

The findings revealed that respondents perceive time allocation for the training to be limiting in terms of content coverage and the scope of work entailed. Companies often make time-allocation for training decisions with the business operations requirements in mind which results in them being reluctant to release employees for training for too long taking the impact on the bottom line. The researcher asserts that training is a disruptor that should be accommodated in the companies' schedules. Annual targets are pre-determined without incorporating these disruptors which are necessary for keeping companies abreast with the need for human capital development. Chayakonvikom , Fuangvut & Prinyapol (2016) substantiate the negative impact of the under allocation of time for the ERP system training. Enough time allocated to cover the content of training puts the system users in a position to gain the full benefit of the training. Supporting the finding, Chou (2014) argues that most of the end-users are pressured to learn the ERP system concepts within a very short period which is almost difficult to achieve taking the system content coverage into account.

Knowledge of training conductors

Respondents perceived the knowledge of training conductors to be inadequate. The researcher aligns with the maxim that says "garbage in garbage out" which suggests that if the input is of inferior quality, the output will also be of inferior quality. Alballaa and Al-Mudimigh (2011) substantiate that many adopting company employs the "train-the-trainer" whereby key-users are selected by the adopting company to be trained extensively by an experienced consultant for them to transfer the knowledge to their colleagues. It draws concerns when this method of training is employed because if the training conductor or the consultant does not know the chances are the transfer of knowledge would not be sufficient to be transferred by the key-users to the end-users. The consulting firms often employ a mix of both experienced consultants and novices who are often new graduates without business understanding to deliver quality service. Consulting firms are often open to bring in novice consultants to act as a force multipliers without incurring the monetary costs associated with the costs of the experienced consultant (Troper and Lopez, 2009). This practice has an economic advantage to consulting firms however catastrophic to companies receiving the service.

The practical part of training

The respondents perceived the practical part of training not adequate to enable them to comprehend the ERP system. The researcher concludes therefore that, failure to understand the system by the end-user is disastrous in the post-implementation stage as the end-users are struggling to work on the ERP system. Soja & Paliwoda-Pekosz (2009) claimed that inadequately trained users negatively impact on the implementation of an ERP system. Poor training or ineffective training methods (Houghton & Kerr 2006; Kerr, Houghton & Burgess 2007) were pointed as other impediments to ERP system implementation where facilitators conduct training through teaching and slide shows other than the preferred practical work or workshop simulation training techniques that are founded on real business cases matching the organization's requirements.

Technical support for system users

The respondents claim that there is insufficient technical support offered to end-users. Therefore, it implies that system error, data error, and operational error, cannot be dealt with efficiently as there is no technical support and guidance which if not offered on time could compromise the system. In supporting the statement, Soja & Paliwoda-Pekosz (2009) also claimed a lack of support from IT experts negatively impact on the implementation of an ERP system. Research indicates that failure to obtain technical support and assistance from key-users to investigate the root cause of the problem could result in delays in transaction processing as well as inaccuracies of data (Tajul Urus, 2013). Tajul Urus (2013) further argues that the inability to transfer technical knowledge affects the user's confidence and skills of using an ERP system.

Knowledge sharing

The respondents dispute that there is no knowledge sharing in the company about the solution for the ERP system challenges hence they indicated in one construct that they do not know who to contact if they needed support. Corroborating this finding, Tajul Urus (2013) indicated in one of his findings that users were concerned that when they had problems with the ERP system, the internal consultant will investigate the problem and resolve it without training the system end-users how to resolve the problem themselves. Furthermore, Alballaa and Al-Mudimigh, (2011) highlighted that key-users

often lack the capacity to transfer knowledge, unable to properly respond to end-users' questions on business processes and various functions of the ERP system. This creates a gap in knowledge sharing from consultants to key-users and end-users. As a result, end-users are put at the receiving end of knowledge deficiency and hence have nothing to share with their counterparts within the company.

5.3 Recommendations

The following recommendations emerged from the findings:

Scheduling of the ERP training

Special attention should be paid to the training schedule of the new ERP system. The training schedule should be negotiated and agreed upon with the ERP system consultants or key-users taking into account the system characteristics tailored to the company ERP system requirements. Also, training should be scheduled closer to implementation so that system content provided will still be fresh by the time end user start working on the new system. The researcher also recommends that appropriate scheduling of training should be coupled with on-going refresher courses to close possible training gaps identified post-implementation.

Time allocation

The participants' implication about time allocation for the training is that it is limiting in terms of content coverage and the scope of work entailed. Special attention should be paid to the duration of training which is considered too short resulting in consultants rushing through the content to finish at the pre-determined time-frames thereby compromising on the quality of the content to be transferred to the end-users. The expertise of consultants should be relied upon in terms of time allocation for the system training to avoid companies dictating terms on time-frames overlooking the content to be covered.

Notwithstanding that training is not included in most companies' annual plans, the researcher recommends that companies should accommodate it with its temporary negative impact on productivity and the bottom line due to employees being taken

away from their work stations bearing in mind that it has the potential of enhancing productivity and unlocking the efficiencies in the long run.

Knowledge of training conductors

The researcher recommends that background checks of the experience and expertise of prospective ERP consultants be carried out before Service Level Agreements (SLAs) could be agreed upon between the company and consulting firms. Also, the company should have powers to decide which of the consultants in the pool of that consulting firm should render them that service based on the background checks carried out.

The practical part of training

Training facilitators should ensure that more practical demonstrations are included in their training and less of theory. They should involve the end-users in more “learn by doing activities” than feeding them with a lot of information that could easily be forgotten. The researcher upholds the old adage that says 'tell me and I forget, teach me and I remember, involve me and I learn’. Assessment is an integral part of every training hence involving end-users throughout the processes is a way of assessing their level of learning and comprehension of the system. Provision of adequate training to employees representing different managerial levels should be carried out so that system implementation knowledge is not only clustered at senior level employees but evenly spread at all levels.

Technical support for system users

In dealing with usage issues such as system error, data error, and operational error, the problems can be dealt with efficiently by providing technical consultation and guidance on time, which in turn boosts the extent of system usage (Chang, K-C, Lie & Fan 2010). The researcher, therefore, recommends that technical consultation afforded to end-users should include guidance and further training on how to address the problem at hand rather than consultants fixing or addressing the system challenges without involving the end-users. Supporting the recommendation, Bhattacherjee and Hikmet (2008) assert that the availability of a resource person or a team of resource personnel (depending on the size of the company) to provide

instructions and hands-on support to system users before and during usage would eliminate system post-implementation challenges.

Knowledge sharing

The researcher posits that refresher courses should be conducted on an on-going basis with problem busting techniques on identified ERP problematic areas. ERP trainees should be afforded an opportunity to evaluate the training. The management should use the evaluation results as a yardstick to identify gaps and strategize on the improvement of the training. Companies should create a query log portal where all ERP related challenges and suggested solutions are shared within the company by all end-users. All the ERP related inquiries should be logged through the portal. Email and/or telephone ERP related inquiries should be discouraged as they limit knowledge sharing as the sender and the recipient are the only ones that benefit from the correspondence and not the whole company.

5.4 Meeting of research objectives

The primary objective of this study was to investigate the challenges at the post-implementation stage of ERP system at the Fast-Moving Consumer Goods (FMCG) Company. Data analysis shows there is a significant negative correlation of -0.300 between the views of employees in the senior and junior roles. Employees in the senior roles point to a number of challenges some in the pre-implementation stage that resulted in challenges in the post-implementation stage: The pre-implementation challenges include among others:

- dissatisfaction with the timing of the ERP system claiming that the training was not provided at the right time before implementation to prepare them for the new ERP system.
- consider time allocated very limiting and insufficient in terms of the training content coverage and the pecuniary scope of work entailed.
- the training conductors were not knowledgeable about the new ERP system
- practical part of the training was poor in terms of increasing their understanding of the ERP system.

As a result of these challenges in the pre-implementation phase, the following post - implementation challenges were experienced by senior employees:

- they do not know whom to contact if they needed technical support on the new ERP system challenges.
- since the training conductors were not highly knowledgeable, the key-users were not geared to resolve all arising technical challenges from the end-users.
- there is no knowledge sharing in the company about the solution for the ERP system challenges hence they indicated in one construct that they do not know who to contact if they needed support.

To further achieve the main objective, the following objectives were set:

To determine the nature of ERP system training administered to end-users. To address this objective, an extensive literature review was conducted on the nature of the ERP system training administered to end users.

Understand the impact of ERP system training on the ERP system implementation project. Triangulation of data from the review of literature and the data collected through questionnaires from respondents clarified an understanding of the impact of the ERP system training on the ERP system implementation project. There was correlation of literature review and the analysed data from questionnaires upon which findings that portrayed the impact of the ERP system were derived.

To determine ways to address ERP system post-implementation challenges. Resulting from the analysis of data, findings were made and recommendations developed to address the findings.

5.5 Suggestions for further research

Given that this study was conducted in South Africa where the premise is that the respondents are employees from the same national background with more or less the same level of local experience and expertise, further comparative research should be undertaken to investigate the post-implementation challenges of ERP in other developing countries.

5.6 Chapter Conclusion

This study has shown that all inputs in the ERP system training contribute to challenges in the post implement stages of the ERP system if not utilized effectively. The findings from this study make several contributions to the current literature. First that human capital utilized in the ERP system training should have the required level of expertise and those novice trainers should not be made to head the training but they rather support the experienced ones. Second, that time allocation should be commensurate with the level of ERP system training demand in terms of the content to be covered, the practical demonstrations and assessment of key-users and/or end-users. Third, that scheduling of the training should consider closing the lag between training and implementation so that implementation gets into full swing while the end-users could still remember processes they were trained on. Fourth, the training should include more practical training and demonstration. Fifth, that solution should be implemented in the presence of the key-users and end-users so that they learn to resolve the problem on their own. Also, the challenges encountered during system implementation and their solutions should be uploaded on the company's portal to benefit all key and end-users for a future encounter with similar challenges. Lastly, that technical support should be availed to end-users on an on-going basis through a multi-pronged approach which includes refresher courses and giving solutions to the challenges encountered in the presence of the end-users so that they learn.

The scope of this study was limited in terms of the impact of ERP system training on the Annual Performance Plan of companies, the bottom line, and staff development.

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ANNEXURE A: CONSENT FORM

Dear Participant,

Since you have recently been part of the implementation of SAP ERP system within your organizations. I invite you to participate in a research study titled: investigating the challenges during the post implementation stage of an Enterprise Resource Planning (ERP) system at a FMCG Company as part of my Masters in Business Administration research project.

The enclosed questionnaire has been designed to collect information on: The challenges you had after implementing SAP ERP system. Your participation in this research project is completely voluntary. Your responses will remain confidential and will only be used for the purposes of this research project. Participant responses to the questionnaire will not be shared to the third party nor be cross referenced back to the participant.

If you agree to participate in this project, please answer the questions on the questionnaire as best as you can. It should take approximately **15 minutes** to complete. Please return the questionnaire to me via email by **20 February 2019**.

If you have any questions about this project, feel free to contact Utlwanang Motsielwa at motsielwautlwanang@gmail.com/ 071 083 2766.

Thank you for your assistance in this important endeavor.

Kind regards,

_____ _____

Utlwanang Motsielwa Date

I hereby willingly participate in the questionnaire and I understand the contents of this letter.

_____ _____

Signature: Participant Date

ANNEXURE B: QUESTIONNAIRE

1. Demographics:

1.1 Which best describes your position within the company?

Entry Level	Junior Management	Middle Management	Senior Management	Executive Management

1.2 How many years of service do you have with the company?

0-2 years	3-5 years	6-10 years	11-15 years	16+ years

1.3 Have you worked on a SAP system with your previous employer?

Yes	No

1.4 How would you rate your computer skills?

Very poor	Poor	Fair	Good	Very Good

2. Change Management:

2.1 Previous **technological changes** in the company affected me positively.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.2 Previous **technological changes** in the company affected me negatively.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.3 My **workload decreased** as a result of the new SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.4 My **workload increased** as a result of the new SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.5 The new SAP system is **user-friendly**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.6 My **responsibilities decreased** after the implementation of SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.7 My **responsibilities increased** after the implementation of SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.8 The new SAP system did give me the **benefit** that I **expected** it to give me.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.9 I understand **why** the company changed to the new SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.10 I received enough **technical support** after the implementation of the new SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2.11 I knew exactly whom to contact if I needed **technical support** on the new SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3. Training Requirement:

3.1 The **level of training** provided before the SAP system implementation was:

Very poor	Poor	Fair	Good	Very Good

3.2 The **training conductors** were knowledgeable about the SAP system?

Very poor	Poor	Fair	Good	Very Good

3.3 I am **satisfied** with the **training** on the new SAP system that was given prior to implementation of the SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3.4 The **practical part** of the **training** helped to increase my **understanding** of SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3.5 The **training content** provided during the SAP training covered all my training **requirements**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3.6 The **training manuals** provided during the SAP training were easy to follow.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3.7 The **time allocated** for SAP training was sufficient to cover all the content for the training.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3.8 I would have preferred a **second round** of training after implementation of SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3.9 SAP system training was provided at the **right time** before ERP implementation to prepare me for the system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4. User Perception:

4.1 SAP is **easy to use**, compared to the previous system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4.2 I prefer the **old system** over the SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4.3 I understand how my role in using SAP **impacts on other workers**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4.4 I believe that SAP **positively** impacts my career.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4.5 I believe that SAP **negatively** impacts my career.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4.6 The SAP system warns me about **problems** sooner than the old system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4.7 SAP system helps different departments to **work better together**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5. Culture:

5.1 The implementation of SAP **negatively** affected the company's **culture**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5.2 The implementation of SAP **positively** affected the company's **culture**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5.3 The current company **culture is flexible** enough to accommodate the **new way** of doing things at the company after the SAP system implementation.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5.4 I'm **adapting well** to the way of doing things caused by the SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5.5 The **recognition** provided for the support and effort I put into SAP system motivates me.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

6. Communication and Knowledge Sharing:

6.1 Management **keeps track** of the activities in the company due to SAP system implementation.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

6.2 During implementation of SAP, the management **communicated** with me regularly about the progress on SAP system implementation.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

6.3 **Information** is **shared** within the company about solutions for SAP system challenges.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

6.4 I have seen greater level of **knowledge sharing** about SAP system between different departments or different business units.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

7. Business Reengineering:

7.1 Due to implementation of SAP, some **new ways** of doing our work have evolved.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

7.2 SAP changed some **business processes** in the company.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

7.3 I'm aware of **future enhancement** or process improvement that SAP can bring.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

8. Operational Disruption:

8.1 SAP gives me all the **reports** that I got from the previous system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

8.2 I experience that SAP system contributes to better **customer satisfaction**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

8.3 SAP **responds** quicker than the previous system when I am **pulling reports**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

8.4 The SAP system is **regularly offline**.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

8.5 We have **lost customers** due to SAP system.

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree