FACTORS INFLUENCING IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING IN FIRMS: A CASE OF GEOTHERMAL DEVELOPMENT COMPANY IN NAIROBI, KENYA

BY

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A Research Project Report Submitted in Partial Fulfilment for the Requirements of the Award of the Degree of Master of Arts in Project Planning and Management of the University of Nairobi

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DECLARATION

This research project report is my original work and has not been presented for the award of any degree in any other university.

Sign: ………………………………… Date: …………………………………………

Albert Lochilit Panga
L50/82584/2012

This research project report has been submitted for examination with my approval as the university supervisor.

Sign: ………………………………… Date: …………………………………………

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DEDICATION

This research project report is dedicated first, to my parents William and Rebecca Panga for being my role models, pillars of strength and great inspiration. Secondly, to my siblings Grace, Abraham, Mary, Timothy, Andrew, Benjamin and Charity for keeping me grounded and focused. Finally, to my fiancée for her understanding, support and encouragement through the course of this research project.
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ABSTRACT

Enterprise Resource Planning (ERP) systems have become common in large companies and government corporations mainly in developed countries. Over the past three decades, organizations worldwide facing pressure from changing business environments have adopted sophisticated, off-shelf information technology applications rather than build their own information technology systems in-house. While there is wide adoption of ERP systems in Western economies, developing countries lag far behind. Implementation of the ERP systems within organizations plays a critical role in finance functions, human resource functions, supply chain management functions and project management functions of an organization because it provides a platform for enhancing efficiency and effectiveness in organization’s productivity. This study sought to establish the factors influencing the implementation of Enterprise Resource Planning in firms. The study was guided by the following objectives: To assess the influence of end-user training on the implementation of Enterprise Resource Planning in GDC; To establish the influence of communication on the implementation of Enterprise Resource Planning in GDC; To determine the influence of top management commitment on the implementation of Enterprise Resource Planning in GDC and to find out the influence of organizational culture on the implementation of Enterprise Resource Planning in GDC. Descriptive research design will be used for the study. The target population consisted of 18 head of departments and employees of GDC. The sample size was a total of 265 respondents. Questionnaires were used as instruments for data collection. Questionnaires were used to collect data from the employees and the head of departments. Data was analyzed through the use of a computer software SPSS. Primary data from the field was edited first. Coding was then done to translate question responses into specific categories. Coding was expected to organize and reduce research data into manageable summaries. Quantitative data collected was analyzed by descriptive statistics while content analysis techniques will be used to analyze qualitative data. Descriptive statistics such as means, standard deviation, frequencies and percentages were used to describe the data. The analyzed data was presented in form of tables. The study also revealed that the feedback from the User Training was incorporated into the design and implementation of the ERP Modules. The study also revealed that there was no communication plan among the different departments on the implementation of ERP. The study also revealed that top management is necessary for provision of leadership in the implementation of ERP to a large extent. Finally, it further established that organizational culture influences the implementation of ERP. The study concluded that end-user training affects the implementation of ERP. The study further concluded that failure to a communication plan among the departments affects the implementation of ERP. The study further concluded that top management involvement influences the implementation of Enterprise Resource Planning. It can finally be concluded that organizational culture influences the implementation of Enterprise Resource Planning. Major recommendations were end-user training should be improved through organization workshops and seminars. Adoption of effective communication channels to reduce resistance from the employees and increase the implementation of ERP. Top management to increase their level of involvement and also organization culture to be flexible to accommodate the adoption of Enterprise Resource Planning. Areas for further research work included a study on the challenges facing the implementation of ERP.
LIST OF ABBREVIATIONS AND ACRONYMS

ERP  Enterprise Resource Planning
GDC  Geothermal Development Company
BPR  Business Process Re-engineering
TAM  Technology Acceptance Model
TRA  Theory of Reasoned Action
CHAPTER ONE

INTRODUCTION

1.1 Background to the study

As the business world moves ever closer to a completely collaborative model and competitors upgrade their capabilities, to remain competitive, organizations must improve their own business practices and procedures. Companies must also increasingly share with their suppliers, distributors, and customers the critical in-house information they once aggressively protected. Functions within the company must upgrade their capability to generate and communicate timely and accurate information. To accomplish these objectives, companies are increasingly turning to enterprise resource planning (ERP) systems (Loizos, 1998).

Gracheva (2010) describes Enterprise Resource Planning Systems as software systems for business management encompassing modules supporting functional areas such as planning, manufacturing, sales, marketing, distribution, accounting, financial, human resource, management, project management, inventory management, service and maintenance, transportation and e-business. ERP systems in many organizations are described as a pillar of business intelligence as it offer seamless integration of processes across functional areas with better-quality workflow, standardization of several business practices and access to real-time up-to-date data. As a result, companies invest large sums of money on ERP packages and their implementation process (Mottaghi and Akhtardanesh, 2010).

Lured by guarantees of improved business productivity, streamlined business operations, and increased cost savings, organizations worldwide have launched initiatives to integrate ERP systems into their existing business environments (Tilley et al., 2007). There has been a growing increase in using Enterprise Resource Planning (ERP) systems as a business information system platform for large organizations and government corporations in developed countries such as USA, UK, Canada, and Australia (Davenport, 1998).
In a survey by Hawking, Stein & Foster (2004), of 800 U.S. companies almost half had installed an ERP system and these systems were commanding on average 43% of a company’s application budget. Research into 1000 U.S. Fortune companies also indicated that over 60% had implemented an ERP system. It is estimated that 300 billion dollars were spent on ERP systems during the 1990’s. However, the implementation of ERP is a complex process, and many adopters have encountered problems in different phases. According to Kumar & Hillegersberg (2000), ERP systems have now been adopted by the majority of the Fortune top 500 firms, and as the high end of the market becomes saturated, ERP systems are filtering down to medium-sized organizations, and to regions beyond those initially penetrated in Europe and North America.

While there is wide adoption of ERP systems in Europe and North America, developing countries lag far behind (Huang et al., 2004). However, due to economic growth, developing countries such as Kenya are becoming major targets for ERP vendors (O’Kane, 2002; Davison, 2002; Huang et al., 2004). In some developing countries, for example Kenya, a number of large and mid-sized organizations have implemented ERP solutions and more are expected to follow suit. The majority of adopting organizations that joined the ‘ERP bandwagon’ (Kraemers & Dissel, 2000) presumed that with relative ease they can benefit from the alleged ‘best business practices’ that are embedded within ERP systems.

Gargeya & Brady (2005) state that studies, mostly conducted in developed countries, show that organizations often run into costly and sometimes fatal difficulties with implementation and subsequent maintenance of ERP systems. For example, Akkermans & van Helden (2002) and Monk & Wagner (2006) observe that a typical ERP implementation initiative takes anywhere between one and three years and typical budgets are in tens to hundreds of millions of dollars. Companies in Africa have historically been slower off the mark in using IT to automate business processes, they are fast catching up and those still relying on manual systems are no longer commonplace. The ERP requirements of companies in Africa are largely consistent with those of businesses in the rest of the world (Marketos, 2010). Enterprise Resource Planning (ERP) systems have transformed the way organizations go about the process of providing information.
systems. They promise to provide an off-the shelf solution to the information needs of organizations in Kenya (Otieno, 2008).

In Kenya, supermarket chains have adopted the use of ERP system to manage their product planning, purchasing, inventory management, supplier integration, customer service, finance, human resource management and order tracking. Basically, ERP has been used in gaining competitive advantage and reduce costs by improving its overall efficiency in managing inventory and sales (Shah, 2011). Enterprise Resource Planning is a family of software packages used to integrate business organizations with one another. ERP has had a positive impact on the ability of businesses to improve working capital, implement a Total Quality Management (TQM) culture, lower inventory levels, optimize raw materials and sell and deliver products to the customers. ERP has helped alleviate the arduous job of supporting inflexible systems that in most cases result in cost increases, data redundancy and inaccuracy and above all, various inefficiencies (O'Leary, 2000). It is upon this background that this study aimed at assessing factors influencing the implementation of Enterprise Resource Planning.

1.2 Statement of the Problem

According to Armstrong (2005) organizations are trying to become more competitive and efficient by transforming into digital firms where nearly all core business process and relationships with customers, suppliers and employees are digitally enabled. Between Feb and Dec 2010, Ken-Gen implemented ERP to turn weaknesses in its internal environment into strengths and in-turn use these strengths to counter threats in its external environment. But ERP implementation is a complex and difficult process that can potentially reap enormous benefits for successful companies or be disastrous for those organizations that fail to manage the implementation process. Slack (2008) reiterates that far from being the magic ingredient which allows operations to fully integrate all their information, ERP is regarded by some as one of the most expensive ways of getting zero or even negative return on investment. O’Brien (2004) is categorical that “An ERP implementation is like the corporate equivalent of a brain transplant. If you don’t do ERP properly, you can kill your company, guaranteed.” Therefore Ken-Gen needed
to be wary of the inherent pitfalls of implementing the ERP strategy. Many organizations underestimate the effort, cost and strain which an ERP implementation inflicts upon the organization. The complexity of an ERP project is easily misjudged and the consequences are potentially grave. ERP implementation is strenuous, complex, delicate process often accompanied by behavioral and systemic challenges in form of resistance to change, non-supportive culture, structure misalignment, lack of user training, communication hurdles, low top management commitment, poor management of consultants, poor allocation of resources and inadequate incentives.

O’Leary (2000) categorized four reasons why firms are motivated to implement ERP as technology, business practices, strategy, and competitive. Among measures KenGen urgently needed to take were to cut operating costs such as by creation of paperless work environment, perform cost-efficient management of value chain activities and embrace best practices. This role of KenGen in emerging turbulent and constantly changing environment underpinned the need for self examination with a view to formulate strategies apt to meet environmental challenges, address threats, focus on meeting the growing need for power in Kenya and create a strategic lock-in. (KenGen (2007/2008) & KenGen (2008/2009)). It is upon this background that this study aimed at assessing factors influencing the implementation of Enterprise Resource Planning in Geothermal Development Company.

1.3 Purpose of the Study

The purpose of this study was to establish factors influencing the implementation of Enterprise Resource Planning in firms a case of Geothermal Development Company in Nairobi County.

1.4 Research Objectives

The study was guided by the following specific objectives:

1) To assess the influence of end user training on the implementation of Enterprise Resource Planning in Geothermal Development Company.

2) To establish the influence of communication on the implementation of Enterprise Resource Planning in Geothermal Development Company.
(3) To determine the influence of top management involvement on the implementation of Enterprise Resource Planning in Geothermal Development Company.

(4) To evaluate the influence of organizational culture on the implementation of Enterprise Resource Planning in Geothermal Development Company.

1.5 Research Questions

(1) How does end user training influence the implementation of Enterprise Resource Planning in Geothermal Development Company?

(2) How does communication influence the implementation of Enterprise Resource Planning in Geothermal Development Company?

(3) How does top management involvement influence the implementation of Enterprise Resource Planning in Geothermal Development Company?

(4) How does organizational culture influence the implementation of Enterprise Resource Planning in Geothermal Development Company?

1.6 Significance of the study

The findings and recommendations of this study may be important to Geothermal Development Company since it may be able to come up with more effective measures of implementing the improvements on the ERP. Policy makers and practitioners may also use the findings to come up with policies and strategies that would assist to limit failures in the implementation of ERP. Finally, this study may be of value to researchers and scholars as it forms a basis for further research. It may also be a source of reference material for researchers conducting research in other related topics.

1.7 Assumptions of the Study

This study was based on the assumption that the respondents would be willing to answer the questionnaire and that they would answer the questions truthfully. Moreover the researcher assumed that the employees in the target population have understood ERP.
1.8 Limitations of the Study

The researcher faced financial constraints during the study since the researcher required research assistants during data collection, extra costs was incurred on training. The researcher used questionnaires only hence the researcher was not able probe for more information.

1.9 Delimitations of the Study

The delimitation of this study was that by carrying it out in Geothermal Development Company, the researcher saved on the time due to familiarity to the organization of study.

1.10 Operational Definition of Terms

Application software: refers to programs that do real work for users

Communication: is the passing of information across the various functions and levels of an organization

Enterprise Resource Planning system: is a set of business applications or modules, which links various business units of an organization such as financial accounting, manufacturing, and human resources into a tightly integrated single system with a common platform for flow of information across the entire business.

End-user training: refers to the training of the employees using Enterprise Resource Planning System.

Government policies: refers to rules and regulations passed by the government

Organization culture: is a pattern of shared basic assumptions that a group learns as it solves its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

Software: refers to computer instructions or data

Top management involvement: refers to the dedication illustrated by the leaders in an organization.
1.11 Organization of the Study

This study was organized into five chapters. Chapter one covered background of the study, statement of the problem, objective of the study, research questions, purpose of the study, significance of the study, limitations of the study, delimitation of the study, basic assumptions of the study and definition of significant terms. Chapter two reviewed the relevant literature on Enterprise Resource Planning. Chapter three described the research methods used. The research design target population, sample and sampling procedures, research instruments, reliability of the instrument and administration of the instrument and data analysis techniques. Chapter four entailed data analysis and interpretation while chapter five consisted of summary conclusion and recommendations of the study.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
This chapter presented relevant literature on: the concept of Enterprise Resource Planning, the organizational culture in the implementation of Enterprise Resource Planning, training of end users in the implementation of Enterprise Resource Planning, top management commitment in the implementation of Enterprise Resource Planning and communication in the implementation of Enterprise Resource Planning.

2.2 The Concept of Enterprise Resource Planning Systems
Beheshti (2006) defines Enterprise Resource Planning (ERP) system as “a set of business applications or modules, which links various business units of an organization such as financial, accounting, manufacturing, and human resources into a tightly integrated single system with a common platform for flow of information across the entire business.”

Enterprise Resource Planning systems are very large software programs that control every aspect of a company from sales to accounting to supply chain to human resources. Historically, companies have been divided by functional areas, such as marketing and sales or accounting and finance. However, in order to react to the demands of customers in a rapidly changing marketplace, work from must flow quickly and accurately between functional areas (Monk & Wagner 2006). Functional area legacy systems “represent one of the heaviest drags on business productivity” (Davenport, 1998) and have been increasingly replaced by a single ERP system, via a single central database and common reporting tools. Each functional area within an organization is integrated by the software. This cross-functionality promotes business integration with the ability to view real-time results (Ranganathan & Brown 2006).

ERP systems affect a company’s business processes, make them more efficient, and in effect, automate those (Themistocleous, 2006). These large systems change the employees’ jobs and their way of thinking from a functional approach to one of a business process approach (Wieder, Booth et al., 2006).
A classic example of a business process is order-to-cash, where a product is ordered, the product is either manufactured (or located in inventory), then shipped, an invoice sent and a bill paid. In a case study surveying 49 senior managers involved in ERP, more efficient business processes were claimed as a benefit (Chang, 2006). There are numerous other benefits to using ERP systems that are widely touted throughout the literature, such as integrating all of a company’s systems on one network, with one software package giving the benefit of reduced duplication of systems and eliminating costly middleware (Chang, 2006, & Ranganathan, 2006).

Many companies have duplicate systems not only from functional area departmental systems but also from mergers and acquisitions. By using a common database with a cross-functional approach, managers have a single view of the data departments no longer own information and become more successful (McCombs, 2007). Different departments are linked; data is keyed in only once, avoiding typing errors, thus integrating the entire organization (Chang, 2006). In reality, few large companies have only one enormous ERP system. In addition, the holistic view of an entire organization provided through an ERP system can give upper management much-needed control (Monk, 2006).

2.3 End User Training in the implementation of ERP system

End user training has been recognized a critical factor for ERP implementation (Bajwa et al., 2004). Due to the complexity of the integrated ERP system, end user training is essential for a robust understanding of how the system works and how to use it. Consequently, appropriate end user education and training will maximize ERP benefits and increase user satisfaction.

According to the research that was made by Bradley & Lee (2007), training is very important for any enterprise wishing to implement an ERP system. Training is not given enough attention and importance within companies, and frequently companies training practices and even their training budgets are frequently lower than what they should be (Bradley & Lee, 2007). In addition, to understand the new business process, and how the system is changing the whole work procedures, training is required alongside on site support for the managers and the employees during the implementation phase (nah et al., 2001).
Bingi et al. (1999) points to the importance and the massive challenge that training plays in the implementation phase. The authors added that the employees nowadays have more responsibilities and more decision making power due to their use of ERP systems, a failure to correctly train them to use the tool is a critical mistake (Bingi et al., 1999). Moreover, the studies have shown that a lack of training make 30 to 40% of the workers unable to correctly handle demands on the new ERP system (Bingi et al., 1999). The training difficulty especially to employees who are reluctant, afraid or inexperienced in computers is a challenge, and knowledge transfer need to be performed in an efficient and continuous way due to the high complexity of the ERP systems (Bingi et al., 1999).

Training satisfaction play a major role in determining whether an ERP system will be popular or not, and then whether the employees are comfortable working with it (Bradley & Lee, 2007). Bradley & Lee (2007) proved that a good training is essential for any ERP implementation whether it’s in a company or even in a school or an university, they also added that the more employees are satisfied from the training they had, the more usefulness they will display (usefulness is defined by the authors as the perception that an employee has on the effectiveness, efficiently and ease of use of the ERP system).

As mentioned earlier ERP is a complex system thus adequate training and education must be provided to enable the users to use them effectively and efficiently (Bradley, 2008). Training and education would further enhance the users’ level of knowledge and proficiency, thus increasing individual performance and subsequently organizational performance. Nah et al. (2003) stated that sufficient training can increase the probability of ERP system implementation success, while the lack of appropriate training can hinder the implementation. Adequate training and education may also assist the organization to build positive feelings towards the system. More important it may help ERP users to adjust to the organizational change-taking place with the implementation of the system. In addition, training increases ease of use and reduces user resistance, which, in turn, enhances the likelihood of ERP systems use and success (Bradley, 2008). Implementing an ERP system without adequate training may possibly have drastic consequences (Somers and Nelson, 2004).
The full benefits of ERP cannot be realized until end users are using the new system properly. To make end user training successful, the training should start early, preferably well before the implementation begins. Executives often dramatically underestimate the level of education and training necessary to implement an ERP system as well as the associated costs. Top management must be fully committed to spend adequate money on education and end user training and incorporate it as part of the ERP budget. It has been suggested that reserving 10–15% of the total ERP implementation budget for training will give an organization an 80% chance of implementation success (McCaskey & Okrent, 1999).

All too often, employees are expected to be able to effectively use the new system based only on education and training. Yet, much of the learning process comes from hands-on use under normal operating conditions. Thus, a designated individual (preferably the project leader) should maintain ongoing contact with all system users and monitor the use of, and problems with, the new system. There is also a need for post-implementation training. Periodic meetings of system users can help identify problems with the system and encourage the exchange of information gained through experience and increasing familiarity with the system (Krupp, 1998).

User training is aimed to achieve a solid understanding of the system to apply their own knowledge of BP into using of the system (Umble et al., 2003). The ERP cannot play full power if the users are using it improperly (Umble et al., 2003). Also, the system knowledge is obtained through the practical use of it, therefore Umble et al. (2003) suggested the post-implementation training is needed. User training should be conducted in order to reduce the degree of user resistance from ERP using (Sumner, 1999), in such an involuntary situation of using (Chang et al., 2008; Zhang et al., 2005) that in the organization implemented ERP system, the users would have no choice but only use the system, except quit the job.

The project team should make a suitable training plan for users in order to let them understand BPs behind the ERP system (Al-Mashari et al., 2003; Gupta, 2000). The employee work content changes due to the implementation should also be noticed during user training (Finney & Corbett, 2007). Additionally, Sumner (1999) suggested reporting function should be emphasized
during user training. Some organizations found that efforts put in user training can have a higher payback than expected, as the internal staff immersed in system environment can efficiently enhance their system-related knowledge accumulation (Sumner, 2000).

2.3.1 End-user training strategy in the implementation of ERP systems

Today’s business world is a capricious field. Employees are regularly expected to learn new skills and attitudes: changes in the job role and daily tasks take place more as a rule than an exception. Due to the changing environment, employees need training to cope, and to be able to succeed in their tasks also after the changes take place. One of the very demanding and also very common changes in today’s companies is transforming the way to do business by harmonizing the business processes and implementing a common enterprise resource planning (ERP) system to support the company wide integration. Typically these programs take years to complete, involve more or less everybody in the company, and create a heavy change on the employees’ everyday life. Thus the training required for the end-users on the new processes and the supporting system is also very extensive – and expensive (Mahapatra & Lai, 2005).

Evaluating end-user training effectiveness is an area where many companies can, and should, improve. Training is costly as such and especially in ERP implementations companies easily spend a million euro budget on delivering end-users the knowledge and skills they are going to need in the future. While investing heavily on delivering the training, very little effort is made to systemically evaluate the outcome of the training programs. According to the review of the research literature made by Mahapatra & Lai (2005) in the early 2000’s, several studies have been made on how to develop better training programs, but little on evaluating training – especially in an organizational setting. In the same time the business leaders want to see value for their investments – in training as well as in any other field.

The value of a training strategy is that it can enable the training coordinators, trainers, and other stakeholders to determine how to deliver training appropriately and effectively (Sein et al., 1999). The critical question a training strategy must address is: given a tool, or a process, on which a specific user type needs to be trained, what training approaches and methods should be
used to attain the appropriate level of knowledge? To match the appropriate method with the appropriate user with the appropriate tool or process, the training strategy framework by Sein et al. (1999) is based on a classification of trainees, specific training approaches, and the level of knowledge required to be able to use the tools in question.

During 1999-2002 Sein, Bostrom & Olfman (2006) performed a case study aimed at improving their view on the training strategy framework. The study resulted in a new training strategy framework, which consists of four dimensions (Sein et al., 2006): Training outcomes: the knowledge level and skills about a specific IT tool that a trainee can achieve by the end of a training course. Training method and delivery mode: how the training material is delivered to the trainees and who delivers it. Training methods range from instructor-led to self-based, and the delivery mode from traditional (fixed timing, fixed place) to on-line training. User: classifying users based on a variety of factors such as job roles and learning style. Learning content: learning objects that combine to form the training materials.

2.4 Communication in the implementation of ERP System

Strong communication within the entire organization during the implementation process increases success for ERP implementation. It allows the organization’s stakeholders to understand the goal and the expected benefits of the project as well as to share the progress of the project. An “open information policy” protects the various communication failures for the project. (Al-Mashari, Al-Mudimigh, and Zairi, 2003).

For successful implementation of ERP systems, communication across the various functions and levels of a company is needed. Since the communication assists the ERP adopting company to minimize user resistance, it is critical from the initiation to the system acceptance phases (Somers and Nelson, 2004). Esteves-Sousa and Pastor-Collado (2000) stated that both internal communication among ERP project team members and outward communication to the entire company are very essential. Communication among different levels and functions of ERP implementation projects needs a communication plan to guarantee that open communication happens in the whole organization and with customers and suppliers (Kumar et al., 2003). Muscatello and Chen (2008) argued that suitable communication plans should be set up to keep
senior management informed on the subject of ERP project impact, challenges, risks, and progress. The communication should be conducted during ERP steering committee meetings and usual status reporting. Holland and Light (1999) suggested employing communication tools such as newsletters, monthly bulletins or weekly meetings to keep users informed about Enterprise Resource Planning implementation project progress.

Communication is one of most challenging and difficult tasks in any ERP implementation project. Nah et al., (2007) argued that it is important that employees are informed about the scope, objectives, activities and updates in advance to make ERP implementation more efficient. In enterprise system implementations, communication among stakeholders to report project progress and user input and communicating project expectations to all stakeholders are important (Sedera and Dey, 2006).

According to Nah and Delgado (2006), communication should start early, be consistent and continuous, and include an overview of the system, the reasons for implementing it, and a vision on how the business will change and how the system will support these. The effective communication CSF in an ERP implementation includes the communication between departments in the organization (Al-Mashari, Al-Mudimigh, & Zairi, 2003) and between the implementation parties. Chang et al. (2008) also suggested, close cooperation between different parties among the project and different departments within the company can effectively increase employees’ system using, as the employees can receive expectations and pressures from those parties whom they are interacting with in daily work.

For the interdepartmental communication, Stefanou (1999) argued that creating collaborations among the departments and a close work relationship between them can be effective for some technical issue resolutions, and can further facilitate the overall project success. For the way to achieve such communication, the researcher considered the trust and willingness about information sharing is a matter of the organizational culture that cannot be resolved by any form of technologically support (Stefanou, 1999).
On the other hand, among the communication between implementation parties in the project, a case study by Sumner (1999) indicated the project team should let everyone in the enterprise be aware of the meaning of the project, as well as the scope and schedule of it (Sumner, 1999). For the difficult and tough issues that existed in one party or between a few parties in the preparation phase of the project, they should be addressed directly and in time, to prevent more issues emerged and even harder to resolved in later phases (Sumner, 1999).

Despite the meaning of communicating among social groups, the effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees, as suggested by Aladwani (2001). The researcher proposed that communication is an effective strategy to affect users’ attitudes toward the new system and further improve the situation of user resistance. The researcher also believed the awareness of knowledge about ERP and how it operates can build anticipation and virtuous expectation for employees. To achieve this, management can play the role of explaining how ERP system will work, whereas reputable individuals and opinion leaders are also effective for spreading the spirit of supporting the project activities (Aladwani, 2001).

Under the setting of the project team members are representatives from business functional departments, Akkermans and van Helden (2002) concluded that the interdepartmental communication and collaboration is the core process for ERP project progress, while the key stakeholders (top management, project champion, and ERP vendor) were identified to be the root causes for the performance of this core process.

2.5 Top management involvement in the implementation of ERP System

Top management support was supposed by many articles to be one of the top critical factors in a successful ERP implementation, in other words, obtaining support from top management in the organization is extremely critical (Finney & Corbett, 2007; Zhang et al., 2005).

Top management support, has been emphasized, as a crucial factor in successful ERP implementation by many (Zhang et al., 2005; Ngai et al. 2008) claimed that top management support, plays a significant role in the ERP implementation success because ERP are normally
large-scale and require extensive resources. Al-Mashari et al., (2003) suggested that top management support should not stop at the initiation and facilitation stage, but it should continue throughout the entire ERP implementation process. According to Zhang et al. (2005), top management support has two major aspects in ERP implementation projects: providing the necessary resources and providing leadership. The responsibilities of top management in ERP implementation include communicating the company strategy to all members of the organization, developing an understanding of the restrictions and abilities, demonstrating commitment, and establishing rational objectives for the ERP implementation (Umble et al., 2003).

Many studies provided evidences that display how top management support is essential during the entire ERP implementation process and how it remained critical in order to reap the benefits (Bradford and Florin, 2003). Willcocks and Sykes (2000) noted that senior-level sponsorship, championship, support, and participation are one aspect of organizational factor that influences ERP success. Implementing ERP does not only involve changes in software systems usage rather it involves the repositioning of a company and transformation of all business practices. Therefore, top management should publicly, explicitly, and sincerely show their support (financial and non financial) to emphasize the precedence of the ERP implementation (Somers and Nelson, 2004).

The support, commitment, authority and leadership from top management are important to secure the employee acceptance of the changes brought by the project (Aladwani, 2001), and is related closely to the success of the whole project (Ifinedo, 2008). The support and commitment from top management are part of the social factors that can improve the ERP system usage of employees in the company, then achieve a more successful implementation (Chang, Cheung, Cheng, & Yeung, 2008), because the top management influences can facilitate the user acceptance of new system by broadcasting the system benefits to the employees (Aladwani, 2001). Another explanation is that the commitment from top management will percolate down to the whole organization and ultimately result in an overall organizational commitment (Bingi et al., 1999).
Besides, Nah et al. (2001) suggested the top management should set policies on new systems usage to guarantee its spread throughout the organization. The top management should actively move the project forward. In the beginning, top managers need to make the whole strategic business plan and goals, and initiate the project (Nah et al., 2001; Shanks et al., 2000). The support and commitment from top management should cover the implementation phase, to monitor and control the project progress (Bingi et al., 1999), and guarantee the sufficiency of ongoing human, time and other resources (Shanks et al., 2000). The top leaderships should also continuously support and pay attention to the project in post-implementation phases (Ifinedo, 2008).

The support of the top management also includes their involvement in the project, which is essential in the implementation as asserted by Akkermans and van Helden (2002). In their case study, the project met crisis because of the lack of collaboration between different parties and different departments. Later, they solved this crisis successfully. One of the critical solution they applied was the active involvement of senior management: in the workshop that employees from multi-department sorted out the BPs, if there was still no result after 5 to10 minutes of discussion, the issue would be flagged and handed over to the senior management to make decision. Nevertheless, it still took much more time for the management to solve these issues than they expected. Having experienced these activities, the management became more aware of the project (Akkermans & van Helden, 2002). However, in terms of authority control, it should be noticed that a centralized authority should be built for the project instead of a multi-authorities condition, which may cause complex issues and conflicts among commands requirements by different positions of leaders (Sumner, 1999).

Successful ERP implementation depends on management to prepare for challenges that might be faced (Motwani, Mirchandani, Madan & Gunasekaran, 2002), as well as senior management who are involved in overall strategy of the company and are not familiar with technical aspects (Yusuf, Gunasekaran & Abthorpe, 2004). Also, top management commitment and support leads to overall organizational commitment across an organization. It results in the successful ERP implementation (Umble & Umble, 2002).
Top management support is vital for the success of IT projects in organizations because of its influence and role in providing financial resources and relevant guidelines (Dong, 2001), and researchers have found a positive relationship between top management support and IS effectiveness or success (Thong et al., 1996). Many organizations purportedly adopt ERP to meet their organizational objectives: goals and mission (Bingi et al., 1999). However, Deloitte Consulting (2000) and Davenport (2000) note that the high failure rates of ERP project in organizations can be attributed to poorly defined goals and mission with regard to their ERP acquisitions. Researchers (Willcocks & Sykes, 2000) have stressed that an ERP is more than just another IT system for the adopting firm, and there is a need to have strategic clarity before embarking on its adoption. With respect to organizational size, Mabert et al., (2003) note that ERP benefits differ according to firm size. Sedera et al., (2003c), investigating ERP systems success in public organizations found support for the claims in Mabert et al’s study, i.e., larger firms experience more ERP benefits than smaller-sized organizations.

Top management support and commitment is needed throughout the ERP adoption process because the project must receive approval and align with strategic business goals. Top managers must commit themselves to involve in the project for allocating the required personnel resource for implementation and giving appropriate time to finish the job. A share vision of the company and the role of the new system and structures should be communicated between managers and employees. Moreover, top managers should be the persons to harmonize any conflicts between internal and external parties (Nah et al., 2001).

Top management should not entrust their duties of ERP implementation to their technological departments because it is more than a technological challenge. Project planning, forming the project team, choosing the ERP package and the ERP implementer, the project sponsor and supervisor are among the duties that can only be done by top managers. The following characteristics for this factor can be summarized: Highly support and approval from top management is required during the adoption process. Top management should not entrust the tasks in the ERP implementation. Top managers must commit to involve in the project and allocate the required personnel resources. Top managers should be the persons to harmonize any
conflicts between internal and external team members. The new company’s structure and roles should be communicated to employees (Nah et al., 2001).

The study of national cultural differences and resultant repercussions for management has been dominated by the characterization of culture along a variety of predetermined attitudinal dimensions or predispositions to action. Understanding culture is a vital activity for top management executives because it affects strategic expansion, efficiency, and learning at all levels of management. Leadership culture is a key to the success of IS adoption and effective leadership is the means by which the culture is created and managed. Management attitudes and values concerning control, management, and communication can hinder successful implementation (Jayaganesh and Shanks, 2009).

According to Srivastava and Gips, (2009) it was very common in China that there was a lack of strategic expectancy for ERP adoption and management did not see the strategic benefits. Cross-functional teamwork was lacking as many managers put the needs of their department above the needs of the enterprise because the project was considered IT-related and did not have a strategic focus or sponsor in top management, the IT staff took the lead roles on the project teams. According to Baloglu (2004) Turkey case where the culture of everybody wants to be a leader though they have not adequate knowledge and experience, sometimes create a barrier for the successful technology implementation projects. Since technology projects are one of the important investment projects for an enterprise, project manager may behave emotionally instead of being logical (Baloglu, 2004). In china, leaders are more inclined to value the past and more combative to changes, a tendency which may pose a hurdle to business process reengineering (BPR) (Ngai et al., 2008).

According to Ngai et al., (2008) Chinese state-owned firms are more tolerant of unclear information, and top managers tend to rely on personal experience and intuition in making decisions. Managers and employees incline to treat data gathered from their work activities as their own, rather than company assets. This belief may adversely affect the attitude towards information sharing, and business process re-engineering.
Successful implementations require strong leadership, commitment, and participation by top management (Laughlin, 1999). Since executive level input is critical when analyzing and rethinking existing business processes, the implementation project should have an executive management planning committee that is committed to enterprise integration, understands ERP, fully supports the costs, demands payback, and champions the project. Moreover, the project should be spearheaded by a highly-respected, executive-level project champion (Maxwell, 1999).

2.6 Organizational culture in the implementation of ERP System

The environment in which an ERP system is developed, selected, implemented and used constitutes a “social context”. This ecosystem includes several stakeholders, from the developers of the system, to vendors, the consultants, the project team, and the eventual users. Each one of these holds a certain cultural assumption towards the ERP implementation and use process (Rasmy et al., 2005). Particularly, the developers’ and consultants’ cultural assumptions are embedded in the very roots of the software itself. If cultures of producers and users are different it results in a cultural clash (Otieno, 2010).

The culture of an organization is defined as “a pattern of shared basic assumptions that a group learns as it solves its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” (Schein, 2000). The implementation of ERP systems always mandate change in business process and organization culture. Organizational culture plays an important role during implementation of ERP systems and consequently its success (Shah et al., 2011). It enforces rules, values and practices at the organizational and individual levels (Rasmy et al., 2005).

In China case, Rabaai (2009) revealed that an ERP implementation was unsuccessful due to national cultural factors. Also, a study conducted by Allen and Kern (2001) on ERP implementation in Singapore showed a significant misfit in terms of data format, procedures, and legal requirements. The cultural assumptions within ERP systems and the whole notion of cultural universalism are challenged. ERP implementation adopted successfully in one culture, nation, or region, may be a disastrous failure in another. Thus, adopting an ERP that has been
invented and developed in one culture, country, or region to another diverse culture involves more than simply providing information on the technical features of adopting the software. Several culture factors could affect the implementation of ERP systems and below are some of the factors that have been identified.

The occurrence of globalization means that globally used technologies are not only to be approved but also adapted into local cultures and to their prevailing norms. There is clear potential for a cultural clash when these do not fit the adopting culture's norms. Clash level of the culture embedded in the ERP package with the company’s organizational culture has been identified by Zhou-Sivunen (2006). According to Molla and Loukis (2005), ERP success depends on congruence between the host culture and the ERP system culture.

Implementation of an ERP system in a global environment can be fragmented due to the internal enterprise culture, which is representative of societal culture. The way ERP systems are perceived, treated, and integrated within the business plays a critical role in the success or failure of the implementation. When a Western developed ERP system is implemented in a country where the culture differs greatly from that of the developer, implementation may require localization in order to be successful. In doing so, strategic benefits of ERP systems may be reduced (Srivastava and Gips, 2009). Also Gips (2009) particularly pointed out culture mismatch was the case in China due to the nationalistic culture of business. Rasmy et al., (2005) also confirm that ERP implementation becomes more challenging in Egyptian context where national and organizational culture was mismatched. These factors can result in undesirable design reality gaps, which tend to lead to underperforming systems. Tools transferred from one country to a specific enterprise abroad suffer a double-layered acculturation: the technology is confronted with a foreign national and alien corporate culture (Motwani et al., 2007).

Unlike traditional software development approach, which promotes building systems from scratch, ERP encapsulates reusable best business practices unlike traditional software development approach, which promotes building systems from scratch; ERP captures reusable best business practices. All business units at different countries had their own way of doing
things because of different business processes and local requirements generated by national and local differences (Otieno, 2010). Thus, the initial plan had to be transformed by allowing localized solutions and decentralized ERP implementations, in order to escape the conflicts (Zhou-Sivunen, 2006).

ERP viewpoint is process-based, rather than function-based therefore instigating disruptive organizational changes (Nordheim, 2009). ERP technology is also known for imposing rigid norms of workflows and particular practices upon workplaces and it is well noted that ERP demands on changes to organizational culture (Rabaa'i, 2009). When national or cultural borders are crossed, implementation in a global environment takes on a new dimension. Countries with long histories of highly traditional culture tend to have societal culture embedded in the modern organizational culture, which impacts business decision-making (Srivastava & Gips, 2009). Chinese business culture views change differently than Western culture, placing great value on the past and are reluctant to change, which limits process innovation. Most Chinese users have a preference to use the system to automate current processes rather than change processes to fit in the ERP system.

According to Deng's report cited in (Liu et al., 2011) cultural barriers to change in the Chinese business take place where even with ERP in place, most companies still prefer manual processes or old systems. He noted restructuring a company for ERP implementation was painful because of inflexible change management and top management preferred to keep old control methods (Liu et al., 2011; Arunthari, 2005). This often required major customization for the Western ERP vendor if the system was to fit into the business culture (Srivastava and Gips, 2009; Zhou-Sivunen, 2006). ERPs have also proved challenging to implement even in Western organizations, often due to an underestimated requirement for change management and the repositioning of roles and their meaning for actors (Boersma and Kingma, 2005). Countries in Sub-Saharan Africa for instance that has diverse value and belief system inevitably need substantially longer time for the adaptation and acceptance of such a major organizational change.
2.7 Theoretical Framework

2.7.1 Technology Acceptance Model (TAM)

In order to explore the acceptance issue of information technology more deeply, Davis (1989) has proposed the Technology Acceptance Model (TAM), which was based on TRA model and has absorbed rational internal dimensions from expectancy theory and self-efficacy theory. Different from TRA model, TAM model doesn’t have the following three constructs in Theory of Reasoned Action: subjective norm, normative belief and motivation to comply. Theoretically, TAM believes that the primary determinants of information technologies adoption in organizations are perceived usefulness and ease of use (Davis, 1989).

Several studies (Adamson & shine, 2003; Brown et al., 2002; Rawstorne, Jayasuriya & Ca-puti, 1998) have applied TAM (Technology acceptance model) to explain or analyze the end-users’ acceptance in an ERP system environment, the main reason of utilizing TAM is that it provides a foundation to find out the impact of external variables on internal values, attitudes, and intent.

This study therefore used the theory of Technology Acceptance Model as blue print for understanding social dynamics in the implementation of new technology. It also offers a means to be aware of the forces that work in the relationship between people and change. New technology is becoming global because of the efficiency associated with new technology.

2.7.2 Technology Acceptance Model 2 (TAM2)

Based on Davis (1993) and other researchers’ research conclusion, Venkatesh & Davis (2000) have improved the TAM, and increase the explanatory capability of TAM. They brought in the concept social influence process and cognitive instrumental process in-to the model, and regard them as perceived usefulness’ determinate variable; therefore the original layout has been changed in which perceived usefulness is only determined by external variable and perceived ease of use. And Venkatesh & Davis (2000) named the new model TAM2. This study adopted the use of Technology Acceptance Model 2 to explain the aspects of social influence process and cognitive processes in the adoption of new technology.
2.8 Conceptual Framework

The conceptual framework indicates that the implementation of Enterprise Resource Planning in Geothermal Development Company would require effective end user training, improved communication channels, active top management involvement and flexible organization culture. However, the implementation of ERP has not been achieved because of poor end user training that leads to poor skills and knowledge on ERP usage. Moreover, communication tools have due to lack of interdepartmental communication plan and poor communication tools. When it comes to top management involvement, they have not promoted implementation of ERP by poor participation, unpreparedness and inadequate resources. In addition, there are challenges when it organization culture. Rigid organization culture affects the implementation of ERP. If the above factors are to be addressed then the outcome is that there will be implementation of ERP with well trained end users, better communication channels, active top management involvement and flexible organization culture.
Figure 1: Conceptual Framework
2.9 Research Gap

Apart from the literature reviewed, other studies have been conducted on ERP that are in one way or another similar to my study. Allen and Kern (2001) on their study on ERP implementation in Singapore found a significant misfit in terms of data format, procedures, and legal requirements. That is ERP implementation adopted successfully in one culture, nation, or region, may be a disastrous failure in another. Even though his study has similar variables to my study, this study seeks to establish factors affecting the implementation of ERP in firms hence the knowledge gap.

Bradley & Lee (2007) on their study on ERP found that a good training is essential for any ERP implementation whether it’s in a company or even in a school or an university, they also added that the more employees are satisfied from the training they had, the more usefulness they will display. This study is different from my study, which highlights the influence of end-user training on the implementation of ERP hence the knowledge gap.

Srivastava and Gips, (2009) in their study on strategic expectancy for ERP adoption and management found that cross-functional teamwork was lacking as many managers put the needs of their department above the needs of the enterprise because the project was considered IT-related and did not have a strategic focus or sponsor in top management, the IT staff took the lead roles on the project teams. This study is different from my study, which highlights factors the influencing the implementation of ERP in hence the knowledge gap.

2.10 Summary

From the literature review it is evident that various factors influence the implementation of ERP. The Literature reviewed highlights issues that warrant further consideration with in light of ERP adoption and implementation. Therefore, it can be said that end-user training, communication, organizational culture and top management involvement are some of the factors to be considered in the implementation of ERP.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This chapter outlined various methodologies the study used in conducting this research, and covers different approaches such as research design, study population, sampling design and procedure, data collection instrument, data collection procedures and methods of data analysis. It explained various scientific methods used in achieving the study objectives.

3.2 Research Design
This study used descriptive survey design to establish the factors influencing the implementation of Enterprise Resource Planning in Geothermal Development Company, Nairobi County. Descriptive study seeks to obtain information that describes phenomena by asking individual about their perception, attitudes, behavior or values, (Mugenda and Mugenda, 2003). Moreover, descriptive design is concerned with finding out who, what, where and how of a phenomenon exists which is the concern of this study. This design was therefore appropriate as the researcher was at a position to establish the factors influencing the implementation of Enterprise Resource Planning in Geothermal Development Company.

3.3 The Target Population
The population for the study was the employees of Geothermal Development Company. The target population was all the employees and head of departments (834) in Geothermal Development Company in Nairobi (GDC Report, 2014).

3.4 Sample size and Sampling procedures
This research adopted two sampling techniques; simple random sampling and purposive sampling. Simple random sampling was used to select employees while purposive sampling was used to select department heads. Simple random sampling was used because it required minimum advance knowledge of the population. It also gave equal chances for the respondents to participate in the study. On the other hand, purposive sampling was deemed appropriate as only those who are deemed to have information required for the study were targeted.
The researcher selected the sample size using Krejcie and Morgan table. According to Krejcie and Morgan’s table, if the target population was 834 the sample would be 265.

### Table 3.1 Sample Size

<table>
<thead>
<tr>
<th>Targeted Population</th>
<th>Population</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of departments</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Employees</td>
<td>816</td>
<td>247</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>834</strong></td>
<td><strong>265</strong></td>
</tr>
</tbody>
</table>

### 3.5 Research Instruments

Questionnaires were used for data collection. In the selection of the instruments to be used in the study, the researcher ensured that the instruments chosen are suitable and appropriate. The researcher used questionnaires due to their characteristic that they could be used to capture large amounts of data which may contain both quantitative and qualitative data. Questionnaires were used to collect data from the head of departments. Both open ended and closed ended questionnaires were used to collect data for the study. The questionnaires were divided into different sections whereby each section addressed questions to achieve each of the specific objectives of the study.

### 3.6 Piloting

According to Mugenda and Mugenda (1999), piloting refers to pre-testing of the research instrument by administering it to a selected sample which is similar to the actual sample which the researcher plans to use in the study. The pilot study was used to identify items in the questionnaire that are ambiguous or unclear to the respondents and hence changed or modify them. The pilot study also helped the researcher to familiarize with the administration of the instrument.

### 3.6.1 Validity of the instrument

According to Mugenda and Mugenda (2003), validity is the degree to which results obtained from the analysis of data actually represent the phenomena under study. A valid instrument
should accurately measure what it is supposed to measure. After administering the instruments to
the selected respondents, the data obtained will be a true reflection of the variables under study.
Expert opinion from my supervisors and from other professionals well versed in research issues
were used to check on the content validity of the instruments.

3.6.2 Reliability of the instrument

Reliability is a measure of the degree to which a research instrument yields consistent results or
data after repeated trials (Mugenda & Mugenda, 2003). A pilot study was conducted in one
organization that uses ERP which was not included in the main study. The aim of pre-testing was
to measure the clarity and relevance of the instrument items so that those items found to be
inadequate for measuring variables were either discarded or modified to improve the quality of
the research instruments. The Researcher used test-re-test reliability method by administering
questionnaires twice to the same respondents after an interval of two weeks to ensure
consistency.

The scores on the first and second test were then computed and a reliability coefficient was
calculated in order to indicate the relationship between the two sets of scores which was
obtained. Pearson’s product moment correlation formula was used to check for the reliability.
The average reliability coefficient was 0.8 hence the instruments were deemed reliable.
According to Gray (2004) a correlation co-efficient of about 0.8 is high enough to judge the
instruments as reliable for the study. In this test, a reliability of 0.8 was achieved. The study
considered a correlation coefficient of between 0.7 and 0.9 to be reliable.

3.7 Data Collection Procedure

The data collection of this study started with the researcher obtaining a letter of introduction
from the University of Nairobi. An authority letter was then acquired from the National Council
of science and Technology before embarking to the field to collect data. One day training was
the conducted for the 3 field assistants to understand the study objectives, master the research
instruments and go through the ethical requirements.

The researcher made appointments with the manager to notify and request for permission to
carry out the study in the organization. The researcher administered the instruments personally to
the respondents who were given ample time to respond to the questions. This is to ensure achievement of a good return ratio and gave the respondents a chance to seek clarification on items which might prove difficult to answer.

### 3.8 Methods of Data Analysis

Primary data from the field was edited first. Coding was then done to translate question responses into specific categories. Coding was expected to organize and reduce research data into manageable summaries. Both qualitative and quantitative data analysis technique were used to analyze the data. Quantitative data collected was analyzed, presented and interpreted using both descriptive statistics while content analysis techniques was used to analyze qualitative data collected using interview schedules. Regression analysis was computed to establish the relationship between variables. Descriptive statistics such as means, standard deviation, frequencies and percentages were used to describe the data. The analyzed data was presented in form of tables.

### 3.9 Ethical Consideration

The researcher arranged with the manager at Geothermal Development Company to confirm the dates for data collection and get the consent to carry the research in the organization. This was to eliminate conflicts which may arise from the respondents.

The researcher also sought for a letter from Nairobi University which was used for data collection. This clarified the aim of the research and the nature of the study thus improving cooperation from the respondents during data collection.

The researcher also ensured confidentiality of the information given by the respondents. This was done by using the information without mentioning of the specific names of the people from whom the data collected.
### 3.10 Operational Definition of Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Type of variable</th>
<th>Indicators</th>
<th>Measurement</th>
<th>Measurement scale</th>
<th>Methods of analysis</th>
<th>Research Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-user training</td>
<td>Independent</td>
<td>Training outcomes&lt;br&gt;Training methods&lt;br&gt;Classification of trainees</td>
<td>Number of trained members on ERP&lt;br&gt;Types of training</td>
<td>Ordinal scale</td>
<td>Descriptive statistics analysis computing frequency and percentage for responses to questionnaires</td>
<td>Questionnaires</td>
</tr>
<tr>
<td>Communication</td>
<td>Independent</td>
<td>Channels of communication&lt;br&gt;Styles of communication</td>
<td>Number of levels of communication&lt;br&gt;Flow of communication</td>
<td>Ordinal scale</td>
<td>Descriptive statistics analysis computing frequency and percentage for responses to questionnaires</td>
<td>Questionnaires</td>
</tr>
<tr>
<td>Top management commitment</td>
<td>Independent</td>
<td>Managerial guidance&lt;br&gt;Allocation of resources&lt;br&gt;Influence on employee attitude</td>
<td>Percentage of the total budget allocated for ERP, trainings&lt;br&gt;Number of employees influenced</td>
<td>Ordinal scale</td>
<td>Descriptive statistics analysis computing frequency and percentage for responses to questionnaires</td>
<td>Questionnaires</td>
</tr>
<tr>
<td>Organization culture</td>
<td>Independent</td>
<td>Supportive organization culture&lt;br&gt;Cultural change</td>
<td>Availability of supportive organization culture&lt;br&gt;Changes brought by ERP</td>
<td>Ordinal scale</td>
<td>Descriptive statistics analysis computing frequency and percentage for responses to questionnaires</td>
<td>Questionnaires</td>
</tr>
<tr>
<td>Implementation of ERP</td>
<td>Dependent</td>
<td>Integration of processes across functional areas</td>
<td>Availability of ERP Percentage of cost savings</td>
<td>Ordinal</td>
<td>Descriptive statistics analysis computing frequency and percentage for responses to questionnaires</td>
<td>Questionnaires</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------</td>
<td>-------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>---------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>


CHAPTER FOUR
DATA ANALYSIS, PRESENTATION, INTERPRETATION & DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study. This chapter aimed at presenting the analysis, interpretation and discussions of the findings in accordance to the objectives of the study. The data that was obtained is presented in tabular form using percentages and frequencies.

4.2 Response Rate

The study targeted 265 employees of Geothermal Development Company in Nairobi County out of which 232 responded by completing and returning the questionnaires. This gave a response rate of 88% which according to Mugenda and Mugenda (2003) is appropriate for generalization of the findings as it is more than 50%.

4.3 Demographic Information of the Respondents

This section presents background information of the respondents’ gender, age, education level, and duration of service. These were as presented in the following sub-sections.

4.3.1 Distribution of respondents by Gender

Respondents were asked to state their gender to ascertain whether gender had any influence on implementation of Enterprise resource planning. The findings of the study are as presented in Table 4.1.

Table 4.1 Distribution of respondents by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>124</td>
<td>53.4</td>
</tr>
<tr>
<td>Female</td>
<td>108</td>
<td>46.6</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>
According to the findings 53.4% of the respondents were male, while 46.6% were female. The findings mean that there were more male than female. This analysis indicates that distribution was nearly equal, this can be interpreted to mean there’s gender equality in the implementation of ERP.

4.3.2 Distribution of respondents by Age

The study sought to determine the respondents’ age bracket. The findings of the study are as presented in Table 4.2 below.

Table 4.2: Distribution of respondents by Age

<table>
<thead>
<tr>
<th>Age</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-30 years</td>
<td>80</td>
<td>34.5</td>
</tr>
<tr>
<td>31-40 years</td>
<td>54</td>
<td>23.3</td>
</tr>
<tr>
<td>41-50 years</td>
<td>59</td>
<td>25.4</td>
</tr>
<tr>
<td>Above 50 years</td>
<td>39</td>
<td>16.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings indicated that 16.8% of the respondents were above 50 years, 23.3% of the respondents were between the ages of 31-40 years while 25.4% of the respondents were between the ages of 41-50 years, whereas 34.5% were in the age bracket of 19-30 years. Based on the findings, the respondents who were between the ages of 19-30 years were the majority. This is an indication that the young employees were able to appreciate technology.

4.3.3 Distribution of respondents by Level of Education

Respondents were asked to state their highest level of education to ascertain the influence level of education on the implementation of enterprise resource planning. The findings of the study are as presented in Table 4.3.
Table 4.3 Distribution of respondents by Level of Education

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>College education</td>
<td>52</td>
<td>22.4</td>
</tr>
<tr>
<td>University Degree</td>
<td>99</td>
<td>42.7</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>43</td>
<td>18.5</td>
</tr>
<tr>
<td>PhD</td>
<td>38</td>
<td>16.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The study found that most 42.7% of the respondents were university graduates, 22.4% of the respondents had college education, and 18.5% of the respondents had masters’ degree, whereas 16.4% of the respondents had PhD education. Since majority of the respondents (42.7%) had university qualifications. This can be interpreted to mean that a large percentage of the respondent had knowledge on ERP and also they were in a position to answer questions appropriately.

4.3.4 Experience in ERP

The respondents (employees) were asked the duration of service in ERP adopted organization to ascertain the influence of experience on the implementation of Enterprise Resource Planning System. The findings of the study are as presented in Table 4.4.

Table 4.4 Experience in ERP

<table>
<thead>
<tr>
<th>Experience</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td>42</td>
<td>18.1</td>
</tr>
<tr>
<td>3-6 years</td>
<td>53</td>
<td>22.8</td>
</tr>
<tr>
<td>7-10 years</td>
<td>82</td>
<td>35.3</td>
</tr>
<tr>
<td>Above 11 years</td>
<td>55</td>
<td>23.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings of the study revealed that most of the staff (35.3%) interviewed had 7-10 years of in ERP adopted organizations. It was also found that (23.7%) had above 11 years, 22.8% of the respondents had 3-6 years, while (18.1%) of the respondents had less than 2 years experience.
From the findings it can be said that most of the staff had experience and were therefore considered to have information with regard to Enterprise resource planning.

4.4 End user training

In this section the study sought to determine the influence of end user training on the implementation of Enterprise Resource Planning. The findings are presented in the subsequent sections.

4.4.1 Enterprise Resource Planning System

The respondents were asked to indicate whether an Enterprise Resource Planning system had been adopted in their respective departments. Their views are indicated in Table 4.5

Table 4.5 Enterprise Resource Planning System

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>139</td>
<td>59.9</td>
</tr>
<tr>
<td>No</td>
<td>40</td>
<td>40.1</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The findings of study indicated that 40.1% of the respondents were of the opinion that indeed their departments had not adopted an ERP system while 59.9% of the respondents reported that their department had adopted an ERP system. Those who reported that their departments had an ERP System were the majority. This can be interpreted to mean that the organization supports ERP.

4.4.2 Enterprise Resource Planning System Training

The respondents were asked to indicate the extent to which Enterprise Resource Planning system training had been conducted. Their views are indicated in Table 4.6
Table 4.6 Enterprise Resource Planning System Training

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very large extent</td>
<td>19</td>
<td>8.2</td>
</tr>
<tr>
<td>Large extent</td>
<td>29</td>
<td>12.5</td>
</tr>
<tr>
<td>Small extent</td>
<td>118</td>
<td>50.9</td>
</tr>
<tr>
<td>No extent</td>
<td>66</td>
<td>28.2</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The analysis indicates that 28.2% of the respondents reported that ERP system training was not done in their respective departments. 50.9% of the respondents indicated that the extent to which employees were trained on ERP system was small while 12.5% of the respondents indicated a large extent. Only 8.2% of the respondents indicated a very large. This analysis was interpreted to imply that the employees did not have adequate training to implement of ERP system.

4.4.3 Employee Acceptance

The respondents were asked to indicate their willingness to accept Enterprise Resource Planning system training to be conducted. Their views are indicated in Table 4.7

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very willing</td>
<td>27</td>
<td>11.6</td>
</tr>
<tr>
<td>Willing</td>
<td>51</td>
<td>22.0</td>
</tr>
<tr>
<td>Less willing</td>
<td>123</td>
<td>53</td>
</tr>
<tr>
<td>Not willing</td>
<td>31</td>
<td>13.4</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The results of the study show that 22% of respondents were willing to be trained on ERP system. Whereas most (53%) of the respondents were less willing, 13.4% of the respondents were not willing. Only 11.6% of the respondents were very willing. This is an indication that failure of the employee to accept Enterprise Resource Planning would lead into impartial implementation of ERP.
4.4.4 Employee Satisfaction

The respondents were asked to indicate their level of satisfaction on Enterprise Resource Planning system training to ascertain its influence in the implementation of ERP system. Their views are indicated in Table 4.8

Table 4.8 Employee Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very satisfied</td>
<td>23</td>
<td>9.9</td>
</tr>
<tr>
<td>Satisfied</td>
<td>31</td>
<td>13.4</td>
</tr>
<tr>
<td>Less satisfied</td>
<td>162</td>
<td>69.8</td>
</tr>
<tr>
<td>Not satisfied</td>
<td>16</td>
<td>6.9</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The study findings revealed that 13.4% of the respondents indicated that they were satisfied ERP training whereas majority (69.8%) of the respondents indicated that they were less satisfied with ERP trainings. 9.9% of the respondents were very satisfied with ERP training. Only 6.9% of the respondents were not satisfied with ERP trainings. This is an indication that employees’ satisfaction in training influences the implementation of ERP system.

4.4.5 Feedback

The respondents were asked to indicate whether the feedback from the User Training was incorporated into the design and implementation of the ERP Modules to ascertain its influence in the implementation of ERP system. Their views are indicated in Table 4.9

Table 4.9 Feedback

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>122</td>
<td>52.6</td>
</tr>
<tr>
<td>No</td>
<td>75</td>
<td>32.3</td>
</tr>
<tr>
<td>Not sure</td>
<td>35</td>
<td>15.1</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

According to the findings of the study most of the respondents reported that 52.6% of the respondents indicated that the feedback from the User Training was incorporated into the design and implementation of the ERP Modules, while 32.3% of the respondents indicated that the feedback from the User Training was not incorporated into the design and implementation of the ERP Modules. Only 15.1% of the respondents were not sure. From the findings it can be said
that feedback from user training influences the implementation of ERP. This analysis was interpreted to mean that failure to incorporate feedback from the end user training little improvement on employees’ skills and knowledge will be achieved.

### 4.4.6 Handling Demands of ERP system

The respondents were asked to indicate to what extent they can handle the demands of ERP system to ascertain the influence end user training in the implementation of ERP system. Their views are indicated in Table 4.10

**Table 4.10 Handling Demands of ERP system**

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>94</td>
<td>40.5</td>
</tr>
<tr>
<td>Sometimes</td>
<td>69</td>
<td>29.7</td>
</tr>
<tr>
<td>Rarely</td>
<td>46</td>
<td>19.8</td>
</tr>
<tr>
<td>Never</td>
<td>23</td>
<td>9.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

According to the findings of the study most (40.5%) of the respondents indicated that they can always handle the demands of ERP system, 29.7% of the respondents indicated that they can sometimes handle the demands of ERP system and 19.8% of the respondents indicated that they rarely handle the demands of ERP system. Only 9.9% of the respondents they can never handle the demands of ERP system. This analysis was interpreted to mean that training end users enables them to execute their duties effectively and efficiently.

### 4.4.7 Understanding ERP system

The respondents were asked to indicate to what extent to End user training is essential for a robust understanding of how the ERP works and how to use it in order to ascertain the influence end user training in the implementation of ERP system. Their views are indicated in Table 4.11
According to the analysis, 80.2% of the respondents strongly agreed that End user training is essential for a robust understanding of how the ERP works and how to use it. 13.4% of the respondents were neutral while 6.5% of the respondents disagreed that End user training is essential for a robust understanding of how the ERP works and how to use it. This analysis was interpreted to mean that training method and delivery mode affects the implementation of ERP.

### 4.4.8 Extensive and expensive

The respondents were asked to indicate to what extent to which training required for the end-users on ERP is very extensive and expensive to ascertain the influence end user training in the implementation of ERP system. Their views are indicated in Table 4.12

### Table 4.12 Extensive and expensive

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>168</td>
<td>72.5</td>
</tr>
<tr>
<td>Neutral</td>
<td>43</td>
<td>18.5</td>
</tr>
<tr>
<td>Disagree</td>
<td>21</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Majority (72.5%) of the respondents strongly agreed that the training required for the end-users on ERP is very extensive and expensive, 18.5% of the respondents were neutral. While 9.1% of the respondents disagreed that which training required for the end-users on ERP is very extensive and expensive. This was interpreted to mean that inadequate resources can lead to poor implementation of ERP since end user training requires a lot of resources.
4.4.9 Knowledge and skills

The respondents were asked to indicate to what extent to which knowledge level and skills about a specific IT tool that a trainee can achieve by the end of a training course affects the implementation of ERP. Their views are indicated in Table 4.13

Table 4.13 Knowledge and skills

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>186</td>
<td>78</td>
</tr>
<tr>
<td>Neutral</td>
<td>17</td>
<td>7.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>34</td>
<td>14.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings show that 78% of the respondents strongly agreed that knowledge level and skills about a specific IT tool that a trainee can achieve by the end of a training course affects the implementation of ERP. 7.3% of the respondents were not sure while 14.7% of the respondents disagreed that knowledge level and skills about a specific IT tool that a trainee can achieve by the end of a training course affects the implementation of ERP. The study concluded that the knowledge and skills obtained in end user training influences the implementation Enterprise Resource Planning.

4.4.10 Post implementation training

The aim of this question was to gauge the availability of post implementation training in the implementation of Enterprise Resource Planning. Post implementation training was deemed to enhance knowledge and skills in Enterprise Resource Planning. Table 4.14 shows the findings on this variable.

Table 4.14 Post implementation training

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>56</td>
<td>24.1</td>
</tr>
<tr>
<td>No</td>
<td>176</td>
<td>79.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings of the study indicated that 79.1% of the respondents said they had not attended post implementation training, while 24.1% of the respondents indicated that they had attended post
implementation training. Failure to attend post implementation training as indicated by majority of the respondents (79.1%) was an indication that the organization did not gauge the employees’ familiarity with Enterprise Resource Planning and could therefore not gauge the employees capabilities in terms of handling enterprise resource planning issues

4.5 Communication

In this section the study sought to determine the influence of communication on the implementation of Enterprise Resource Planning. The findings are presented in the subsequent sections.

4.5.1 Channels of communication

The respondents were asked to indicate whether the organization has proper channels of communication in order to ascertain the influence of proper communication in the implementation of ERP. Their views are indicated in Table 4.15

Table 4.15 Channels of communication

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>84</td>
<td>36.2</td>
</tr>
<tr>
<td>No</td>
<td>148</td>
<td>63.8</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The study findings revealed that whereas 36.2% of the respondents indicated that organization has proper channels of communication, the majority (63.8%) of respondents indicated that organization has no proper channels of communication. This contradicts a statement by Al-Mashari, Al-Mudimigh, and Zairi (2003) that a strong communication within the entire organization during the implementation process increases success for ERP implementation. It allows the organization’s stakeholders to understand the goal and the expected benefits of the project as well as to share the progress of the project. An “open information policy” protects the various communication failures for the project. Majority of the respondents also reported that a communication plan among the different departments on the implementation of ERP. This analysis was interpreted to mean that improper channels of communication would lead failure in the implementation of Enterprise Resource planning.
4.5.2 Effectiveness of communication of channels

The respondents were asked to indicate the effectiveness of channels of communication in the implementation of ERP. Their views are indicated in Table 4.16

Table 4.16 Effectiveness of communication channels

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very effective</td>
<td>24</td>
<td>10.3</td>
</tr>
<tr>
<td>Less effective</td>
<td>139</td>
<td>59.9</td>
</tr>
<tr>
<td>Not effective</td>
<td>69</td>
<td>29.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

According to the findings of the study 29.7% of the respondents reported that the communications channels were not effective. The study also found out that 59.9% of the respondents reported that the communications channels were less effective. Whereas 10.3% of the respondents indicated that communications channels were very effective. This analysis was interpreted to mean that majority of respondents who reported that the communications channels were less effective probably did not have information communicated to them properly.

4.5.3 Interdepartmental communication plan

The respondents were asked to indicate whether there a communication plan among the different departments in the implementation of ERP. Their views are indicated in Table 4.17

Table 4.17 Interdepartmental communication plan

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>57</td>
<td>24.6</td>
</tr>
<tr>
<td>No</td>
<td>158</td>
<td>68.1</td>
</tr>
<tr>
<td>Not sure</td>
<td>17</td>
<td>7.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings of the study revealed that 24.6% of the respondents reported that there was no a communication plan among the different departments on the implementation of ERP, whereas majority (68.1%) of the respondents reported that there was no a communication plan among the different departments on the implementation of ERP. Only 7.3% of the respondents were not
sure whether there was a communication plan among the different departments on the implementation of ERP.

4.5.4 Communication tools

The respondents were asked to indicate communication tool that was very effective in your organization in the implementation of ERP. Their views are indicated in table 4.18

Table 4.18 Communication tools

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newsletters</td>
<td>25</td>
<td>10.8</td>
</tr>
<tr>
<td>Monthly bulletins</td>
<td>63</td>
<td>27.2</td>
</tr>
<tr>
<td>Weekly meetings</td>
<td>144</td>
<td>62</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The study findings revealed that whereas 27.2% of respondents mentioned that monthly bulletins as communication tools were very effective while 62% of the respondents said weekly meetings were effective communication tools. The study also found 10.8% of the respondents indicated that newsletters were effective communication tools. This is a clear indication that the employees prefer weekly meetings as a tool of communication.

4.5.5 Prior Information

The respondents were asked to indicate whether they had been informed about the scope, objectives, activities and updates of ERP in advance. Their views are indicated in table 4.19

Table 4.19 Prior Information

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>63</td>
<td>27.1</td>
</tr>
<tr>
<td>No</td>
<td>108</td>
<td>46.6</td>
</tr>
<tr>
<td>Not sure</td>
<td>61</td>
<td>26.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>
According to the analysis 46.6% of the respondents indicated that they were not informed about the scope, objectives, activities and updates of ERP in advance. The study also found out that 27.1% of the respondents indicated that they were informed about the scope, objectives, activities and updates of ERP in advance. 26.3% of the respondents were not sure. This can be interpreted to mean that failure to give prior information would the implementation of ERP.

4.5.6 Bottom-up communication

The respondents were asked to indicate on whether they agreed that bottom-up communication within the entire organization during the implementation process increases success for ERP implementation, the responses were as contained in Table 4.20.

Table 4.20 Bottom-up communication

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>140</td>
<td>60.3</td>
</tr>
<tr>
<td>Agree</td>
<td>46</td>
<td>19.8</td>
</tr>
<tr>
<td>Neutral</td>
<td>23</td>
<td>9.9</td>
</tr>
<tr>
<td>Disagree</td>
<td>23</td>
<td>9.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The results of the analysis indicates that majority (60.3%) of the respondents strongly agreed that that bottom-up communication within the entire organization during the implementation process increases success for ERP implementation, 19.8% of the respondents agreed that bottom-up communication within the entire organization during the implementation process increases success for ERP implementation while 9.9% of the respondents disagreed and some were neutral that that bottom-up communication within the entire organization during the implementation process increases success for ERP implementation respectively. It was assumed that those who agreed and strongly agreed had gotten the chance to communicate effectively while those who disagreed did so because they had never gotten such an opportunity.

4.5.7 Minimum user resistance

The respondents were asked to indicate the extent to which communication assists the ERP adopting company to minimize user resistance the respondents’ views were as presented in Table 4.21
Table 4.21 Minimum user resistance

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>150</td>
<td>64.7</td>
</tr>
<tr>
<td>Agree</td>
<td>49</td>
<td>21.1</td>
</tr>
<tr>
<td>Neutral</td>
<td>8</td>
<td>3.4</td>
</tr>
<tr>
<td>Disagree</td>
<td>25</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

According to the analysis 64.7% of the respondents strongly agreed that communication assists the ERP adopting company to minimize user resistance. 21.1% of respondents agreed that communication assists the ERP adopting company to minimize user resistance while 10.8% of the respondents disagreed that communication assists the ERP adopting company to minimize user resistance. Only 3.4% of the respondents were neutral that communication assists the ERP adopting company to minimize user resistance. According to the analysis this can be interpreted to mean that communication changes employees’ attitude towards the adoption of ERP system therefore creating a positive attitude towards the adoption of ERP.

**4.5.8 Benefits of Enterprise Resource Planning**

The study further needed to know to what extent the respondents agreed that effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees. Table 4.22 presents the results of the analysis.

Table 4.22 Benefits of Enterprise Resource Planning

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>110</td>
<td>47.4</td>
</tr>
<tr>
<td>Agree</td>
<td>68</td>
<td>29.3</td>
</tr>
<tr>
<td>Neutral</td>
<td>18</td>
<td>7.8</td>
</tr>
<tr>
<td>Disagree</td>
<td>36</td>
<td>15.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>
The findings show that 47.4% of the respondents strongly agreed that effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees. 29.3% of agreed that effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees. Whereas 15.5% of the respondents disagreed that effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees. Only 7.8% of the respondents were neutral that effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees. The study concluded that indeed there was need for effective communication because when the employees internalize the benefits of ERP the implementation process goes smoothly.

4.6 Top management Involvement

In this section the study sought to determine the influence of top management involvement on the implementation of Enterprise Resource Planning. The findings are presented in the subsequent sections.

4.6.1 Top management Involvement

The respondents were asked to indicate whether there is active involvement senior management in the implementation of ERP. Their views are indicated in Table 4.23

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>92</td>
<td>39.7</td>
</tr>
<tr>
<td>No</td>
<td>140</td>
<td>60.3</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

According to the analysis, majority (60.3%) of the respondents indicated that there was no active involvement senior management in the implementation of ERP whereas 39.7% of the respondents indicated that there was active involvement senior management in the implementation of ERP.
4.6.2 Level of Top management Involvement

The respondents were asked to indicate the level of involvement of senior management in the implementation of ERP. Their views are indicated in Table 4.24

Table 4.24 Level of Top management Involvement

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very large extent</td>
<td>22</td>
<td>9.5</td>
</tr>
<tr>
<td>Large extent</td>
<td>54</td>
<td>23.3</td>
</tr>
<tr>
<td>Small extent</td>
<td>126</td>
<td>54.3</td>
</tr>
<tr>
<td>No extent</td>
<td>30</td>
<td>19.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

According to the analysis, 54.3% of the respondents indicated that the involvement of senior management in the implementation of ERP was small. 23.3% of the respondents indicated that involvement of senior management in the implementation of ERP was in large extent. 19.9% of the respondents indicated no extent. Only 9.5% of the respondents indicated that the involvement of senior management in the implementation of ERP was to a very large extent. This analysis was interpreted to mean that lack of involvement of senior management in the implementation of ERP is an indication of lack of commitment from the top management which can lead to failure in the implementation of ERP.

4.6.3 Type of support

The respondents were asked to indicate the type of support the top management focuses on most in the implementation of ERP system. Their views are indicated in Table 4.25

Table 4.25 Type of support

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>23</td>
<td>9.9</td>
</tr>
<tr>
<td>Personnel</td>
<td>46</td>
<td>19.8</td>
</tr>
<tr>
<td>Technological</td>
<td>94</td>
<td>40.5</td>
</tr>
<tr>
<td>Time</td>
<td>69</td>
<td>29.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>
The findings of the study revealed that 40.5% of the respondents indicated that the top management focuses on technological resources, 29.7% of the respondents indicated that the top management focuses on time resources, 19.8% of the respondents indicated that the top management focuses on personnel resources. Only 9.9% the respondents indicated that the top management focuses on financial resources.

### 4.6.4 Policies on ERP usage

Respondents were asked to report on whether top management has set policies on ERP system usage. The findings were as presented in Table 4.26.

**Table 4.26 Policies on ERP usage**

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>117</td>
<td>50.4</td>
</tr>
<tr>
<td>No</td>
<td>69</td>
<td>29.7</td>
</tr>
<tr>
<td>Not sure</td>
<td>46</td>
<td>19.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

According to the analysis 50.4% of respondents reported that management has set policies on ERP system usage. 29.7% of the respondents reported that management has not set policies on ERP system usage. Whereas 19.8% of the respondents were not sure whether management has set policies on ERP system usage. It was interpreted that probably the top management considered its policies on ERP usage given that majority (50.4%) employees were well aware of this.

### 4.6.5 Preparedness

The respondents were asked to indicate if the top management was prepared for challenges that might arise from ERP system. Their views are indicated in Table 4.27
Table 4.27 Preparedness

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>23</td>
<td>9.9</td>
</tr>
<tr>
<td>Sometimes</td>
<td>92</td>
<td>39.7</td>
</tr>
<tr>
<td>Rarely</td>
<td>70</td>
<td>30.2</td>
</tr>
<tr>
<td>Never</td>
<td>47</td>
<td>20.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The study revealed that 39.7% of the respondents indicated that the top management sometimes prepared for challenges that might arise from ERP system. 30.2% of the respondents indicated that the top management rarely prepared for challenges that might arise from ERP system. 20.3% of the respondents indicated that the top management never prepared for challenges that might arise from ERP system. Only 9.9% of the respondents indicated that the top management always prepared for challenges that might arise from ERP system. This analysis was interpreted to mean that the preparedness of the top management to handle ERP challenges improves the implementation of ERP.

4.6.6 Teamwork

This measure intended to determine the availability of cross functional teamwork among managers. Table 4.28 shows the results of the findings on this measure.

Table 4.28 Teamwork

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>120</td>
<td>51.7</td>
</tr>
<tr>
<td>No</td>
<td>78</td>
<td>33.6</td>
</tr>
<tr>
<td>Not sure</td>
<td>34</td>
<td>14.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The analysis indicates that 51.7% of the respondents reported that there was cross functional teamwork among managers. 33.6% of the respondents reported that there was no cross functional teamwork among managers. Only 14.7% of the respondents reported that they were not if there was cross functional teamwork among managers. Presence of cross functional teamwork among
managers would promote the implementation of enterprise resource planning. This could also have been an indication that there is teamwork.

4.6.7 Leadership

The respondents were asked to indicate to what extent they agreed that top management is necessary for provision of leadership in the implementation of ERP. Their views are indicated in Table 4.29

**Table 4.29 Leadership**

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very large extent</td>
<td>140</td>
<td>60.3</td>
</tr>
<tr>
<td>Large extent</td>
<td>46</td>
<td>19.8</td>
</tr>
<tr>
<td>Small extent</td>
<td>26</td>
<td>11.2</td>
</tr>
<tr>
<td>No extent</td>
<td>20</td>
<td>8.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Majority (60.3%) of the respondents indicated that top management is necessary for provision of leadership in the implementation of ERP to a large extent. 19.8% of the respondents agreed that top management is necessary for provision of leadership in the implementation of ERP to a large extent. 11.2% of the respondents agreed that top management is necessary for provision of leadership in the implementation of ERP to a large extent. Only 8.6% agreed that top management is necessary for provision of leadership in the implementation of ERP to no extent. This is an indication that leadership affects the implementation of ERP.

4.6.8 Alignment of ERP with Strategic business goals

The respondents were also asked to indicate the extent to which they agreed that top management involvement is needed throughout the ERP adoption process because the ERP project must receive approval and align with strategic business goals. Their views are indicated in Table 4.30
The analysis indicates that 48.7% of the respondents agreed that top management commitment is needed throughout the ERP adoption process because the ERP project must receive approval and align with strategic business goals to a large extent. 29.3% of the respondents agreed that top management commitment is needed throughout the ERP adoption process because the ERP project must receive approval and align with strategic business goals to a very large extent. Only 22% of respondents agreed that top management commitment is needed throughout the ERP adoption process because the ERP project must receive approval and align with strategic business goals to a small extent. This analysis indicates that ERP system needs to be aligned with the strategic business goals of an organization.

4.7 Organization culture

In this section the study sought to determine the influence of organization culture on the implementation of Enterprise Resource Planning. The findings are presented in the subsequent sections.

4.7.1 Organization culture

The respondents were asked to indicate whether organizational culture influences the implementation of ERP. Their views are indicated in Table 4.31

Table 4.31 Organization culture

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>163</td>
<td>70.3</td>
</tr>
<tr>
<td>No</td>
<td>69</td>
<td>29.7</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>
Majority (70.3%) of the respondents indicated that organizational culture influences the implementation of ERP, while 29.7% of the respondents indicated that organizational culture does not influence the implementation of ERP.

### 4.7.2 Flexibility

The respondents were asked to indicate whether organization culture was flexible. Their views are indicated in Table 4.32.

**Table 4.32 Flexibility**

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>92</td>
<td>39.7</td>
</tr>
<tr>
<td>No</td>
<td>140</td>
<td>60.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

According to the analysis, 60.3% of the respondents indicated that organization culture was flexible while 39.7% of the respondents indicated that organization culture was not flexible. This is an indication that organizational culture plays an important role during implementation of ERP systems and consequently its success.

### 4.7.3 Support

The respondents were asked to indicate the extent to which the organizational culture supported the implementation of ERP. Their views are indicated in Table 4.33.

**Table 4.33 Support**

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large extent</td>
<td>92</td>
<td>39.6</td>
</tr>
<tr>
<td>Small extent</td>
<td>94</td>
<td>40.5</td>
</tr>
<tr>
<td>No extent</td>
<td>46</td>
<td>19.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

The findings of the study revealed that 40.5% of the respondents indicated that the organizational culture supported the implementation of ERP to a small extent. While 39.6% of the respondents
indicated that the organizational culture supported the implementation of ERP to a small extent. Only 19.8% of the respondents indicated that organizational culture supported the implementation of ERP to no extent. This is a clear indication that a supportive organization culture improves the implementation of ERP.

4.7.4 Enforcement of rules, values and practices

The respondents were asked to indicate the extent to which they agree that organizational culture enforces rules, values and practices at the organizational and individual levels. Their views are indicated in Table 4.34

Table 4.34 Enforcement of rules, values and practices

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>57</td>
<td>24.6</td>
</tr>
<tr>
<td>Agree</td>
<td>123</td>
<td>53</td>
</tr>
<tr>
<td>Disagree</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>38</td>
<td>16.4</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100</td>
</tr>
</tbody>
</table>

Majority (53%) of the respondents revealed agreed that organizational culture enforces rules, values and practices at the organizational and individual levels. 24.6% of the respondents strongly agreed that organizational culture enforces rules, values and practices at the organizational and individual levels. While 16.4% strongly disagreed that organizational culture enforces rules, values and practices at the organizational and individual levels. Only 6% of the respondent disagreed that organizational culture enforces rules, values and practices at the organizational and individual levels. This analysis can be interpreted to mean that organization culture affects the implementation of enterprise resource planning since the employees will be forced to abide the rule, values and practices of an organization.

4.7.5 Repositioning of roles

The respondents were asked to indicate the extent to which they agree that repositioning of roles and their meaning for actors influences the implementation of ERP. Their views are indicated in Table 4.35
Table 4.35 Repositioning of roles

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>105</td>
<td>45.3</td>
</tr>
<tr>
<td>Agree</td>
<td>64</td>
<td>27.6</td>
</tr>
<tr>
<td>Disagree</td>
<td>42</td>
<td>18.1</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>21</td>
<td>9.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>232</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings of the study reveal that 45.3% of the respondents strongly agreed that repositioning of roles and their meaning for actors influences the implementation of ERP. 27.6% of the respondents agreed that repositioning of roles and their meaning for actors influences the implementation of ERP. 18.1% of the respondents strongly disagreed that repositioning of roles and their meaning for actors influences the implementation of ERP. Only 9.1% of the respondents strongly disagreed that repositioning of roles and their meaning for actors influences the implementation of ERP.

Table 4.36 Regression Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.147</td>
<td>.104</td>
<td></td>
<td>10.979</td>
<td>.000</td>
</tr>
<tr>
<td>End user training</td>
<td>.276</td>
<td>.055</td>
<td>.270</td>
<td>5.025</td>
<td>.021</td>
</tr>
<tr>
<td>Communication</td>
<td>.110</td>
<td>.048</td>
<td>.115</td>
<td>2.294</td>
<td>.023</td>
</tr>
<tr>
<td>Top management involvement</td>
<td>.787</td>
<td>.114</td>
<td>.385</td>
<td>6.907</td>
<td>.027</td>
</tr>
<tr>
<td>Organization culture</td>
<td>.309</td>
<td>.091</td>
<td>.303</td>
<td>3.390</td>
<td>.001</td>
</tr>
</tbody>
</table>

4.8 Regression Analysis

Regression analysis was conducted to determine the relationship between end-user training, communication, top management involvement, organization culture and the implementation of Enterprise Resource Planning as presented in Table 4.36 below.
According to the analysis, the equation \( Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \) becomes:

\[
Y = 1.147 + 0.276X_1 + 0.110X_2 + 0.787X_3 + 0.309X_4.
\]

The regression equation indicates that taking all the four variables constant at zero, implementation of Enterprise Resource Planning was 1.147. The findings also indicate that taking all other independent variables at zero, a unit increase in end user training led to 0.276 efficiency in the implementation of Enterprise Resource Planning. In addition, an increase in communication led to 0.110 efficiency of Enterprise Resource Planning. While an increase in top management involvement led to 0.787 efficiency. Finally, an increase in organization culture led to a 0.309 efficiency. At 5% level of significance and 95% level of confidence, end user training had a beta value of 0.021, at 5% level of significance communication had a beta value of 0.023, at the same 5% level of significance top management involvement produced a beta value of 0.027, at 5% level of significance and organization culture had a beta value of 0.001 at the same level of significance. According to the findings it can be concluded that, all the four variables were significant (p<0.05) with organization culture being the least significant and top management involvement being the most significant. The study therefore concluded that all the four variables had an influence on the implementation of Enterprise Resource Planning.

4.9 Discussion of Findings

In reference to objective one which sought to determine the influence of end user training on the implementation of Enterprise Resource Planning, most of the respondents indicated that the extent to which employees were trained on ERP system was small. This contradicts the statement by Bradley & Lee (2007), that training is very important for any enterprise wishing to implement an ERP system. If training is not given enough attention and importance within companies, and frequently companies training practices and even their training budgets are frequently lower than what they should be (Bradley & Lee, 2007). In addition, to understand the new business process, and how the system is changing the whole work procedures, training is required alongside on site support for the managers and the employees during the implementation phase (nah et al., 2001).

Majority of the respondents also strongly agreed that End user training is essential for a robust understanding of how the ERP works and how to use it. User training is aimed to achieve a solid understanding of the system to apply their own knowledge of BP into using of the system.
(Umble et al., 2003). The ERP cannot play full power if the users are using it improperly (Umble et al., 2003). Also, the system knowledge is obtained through the practical use of ERP System, therefore Umble et al. (2003) suggested the post-implementation training is needed. User training should be conducted in order to reduce the degree of user resistance from ERP using (Sumner, 1999), in such an involuntary situation of using (Chang et al., 2008; Zhang et al., 2005) that in the organization implemented ERP system, the users would have no choice but only use the system, except quit the job. The project team should make a suitable training plan for users in order to let them understand BPs behind the ERP system (Al-Mashari et al., 2003; Gupta, 2000). The employee work content changes due to the implementation should also be noticed during user training (Finney & Corbett, 2007). Additionally, Sumner (2000) suggested reporting function should be emphasized during user training. Some organizations found that efforts put in user training can have a higher payback than expected, as the internal staff immersed in system environment can efficiently enhance their system-related knowledge accumulation.

Regarding objective two on the influence of communication on the implementation of Enterprise Resource Planning, majority of the respondents reported that communications channels were less effective. This contradicts a statement by Al-Mashari, Al-Mudimigh, and Zairi (2003) that a strong communication within the entire organization during the implementation process increases success for ERP implementation. It allows the organization’s stakeholders to understand the goal and the expected benefits of the project as well as to share the progress of the project. An “open information policy” protects the various communication failures for the project. Majority of the respondents also reported that a communication plan among the different departments on the implementation of ERP.

Majority of the respondents reported that there was no a communication plan among the different departments on the implementation of ERP. These findings are supported by Esteves-Sousa and Pastor-Collado (2000) stated that both internal communication among ERP project team members and outward communication to the entire company are very essential. Communication among different levels and functions of ERP implementation projects needs a communication plan to guarantee that open communication happens in the whole organization and with
customers and suppliers (Kumar et al., 2003). Muscatello and Chen (2008) argued that suitable communication plans should be set up to keep senior management informed on the subject of ERP project impact, challenges, risks, and progress. The communication should be conducted during ERP steering committee meetings and usual status reporting. Holland and Light (1999) suggested employing communication tools such as newsletters, monthly bulletins or weekly meetings to keep users informed about Enterprise Resource Planning implementation project progress.

Moreover on objective three which sought to determine the influence of top management involvement on the implementation of Enterprise Resource Planning, majority of the respondents indicated that there was no active involvement senior management in the implementation of ERP. This contradicts statement by Top management support, has been emphasized, as a crucial factor in successful ERP implementation by (Zhang et al., 2005, Ngai et al. 2008) that many claimed that top management support, plays a significant role in the ERP implementation success because ERP are normally large-scale and require extensive resources. Al-Mashari et al., (2003) suggested that top management support should not stop at the initiation and facilitation stage, but it should continue thorough out the entire ERP implementation process of the respondents indicated that the top management focuses on technological resources. The respondents also indicated that the top management focuses on time resources., According to Zhang et al. (2005), top management support has two major aspects in ERP implementation projects: providing the necessary resources and providing leadership. The responsibilities of top management in ERP implementation include communicating the company strategy to all members of the organization, developing an understanding of the restrictions and abilities, demonstrating commitment, and establishing rational objectives for the ERP implementation (Umble et al., 2003).

Finally, in reference to objective four which sought to establish the influence of organization culture on the implementation of Enterprise Resource Planning, majority of the respondents indicated that organizational culture influences the implementation of ERP. These findings are supported by (Shah et al., 2011) that the implementation of ERP systems always mandate change in business process and organization culture. Organizational culture plays an important role
during implementation of ERP systems and consequently its success (Shah et al., 2011). It enforces rules, values and practices at the organizational and individual levels (Rasmy et al., 2005).

Furthermore, most of respondents reported that organization culture was flexible. Nordheim, (2009) further explains that ERP viewpoint is process-based, rather than function-based therefore instigating disruptive organizational changes. ERP technology is also known for imposing rigid norms of workflows and particular practices upon workplaces and it is well noted that ERP demands on changes to organizational culture (Rabaa’i, 2009). When national or cultural borders are crossed, implementation in a global environment takes on a new dimension. Countries with long histories of highly traditional culture tend to have societal culture embedded in the modern organizational culture, which impacts business decision-making (Srivastava & Gips, 2009).
CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
In this chapter, summary of the main findings and conclusion are drawn. Recommendations for action by the management are made and areas for further research identified.

5.2 Summary of the Findings of the Study
This section presents the summary of the findings of the study according to the objectives

5.2.1 The Influence of End User Training on the Implementation of Enterprise Resource Planning in Geothermal Development Company
In reference to objective one which sought to determine the influence of end user training on the implementation of Enterprise Resource Planning. 40.1% of the respondents were of the opinion that indeed their departments had not adopted an ERP system while 59.9% of the respondents reported that their department had adopted an ERP system. 50.9% of the respondents indicated that the extent to which employees were trained on ERP system was small. The results of the study show that 22% of respondents were willing to be trained on ERP system. Whereas most (53%) of the respondents were less willing, 13.4% of the respondents were not willing. 52.6% of the respondents indicated that the feedback from the User Training was incorporated into the design and implementation of the ERP Modules. Majority (69.8%) of the respondents indicated that they were less satisfied with ERP trainings. 9.9% of the respondents were very satisfied with ERP training. most (40.5%) of the respondents indicated that they can always handle the demands of ERP system, 29.7% of the respondents indicated that they can sometimes handle the demands of ERP system. Finally, majority (72.5%) of the respondents strongly agreed that the training required for the end-users on ERP is very extensive and expensive.
5.2.2 The Influence of Communication on the Implementation of Enterprise Resource Planning in Geothermal Development Company

Regarding objective two on the influence of communication on the implementation of Enterprise Resource Planning, 36.2% of the respondents indicated that organization has proper channels of communication, the majority (63.8%) of respondents indicated that organization has no proper channels of communication. 29.7% of the respondents reported that the communications channels were not effective. The study also found out that 59.9% of the respondents reported that the communications channels were less effective. 24.6% of the respondents reported that there was no a communication plan among the different departments on the implementation of ERP, whereas majority (68.1%) of the respondents reported that a communication plan among the different departments on the implementation of ERP. The study findings revealed that whereas 27.2% of respondents mentioned that monthly bulletins as communication tools were very effective while 62% of the respondents said weekly meetings were effective communication tools. The study also found 10.8% of the respondents indicated that newsletters were effective communication tools. According to the analysis 46.6% of the respondents indicated that they were not informed about the scope, objectives, activities and updates of ERP in advance. The study also found out that 27.1% of the respondents indicated that they were informed about the scope, objectives, activities and updates of ERP in advance. 26.3% of the respondents were not sure.

5.2.3 The Influence of Top Management Involvement on the Implementation of Enterprise Resource Planning in Geothermal Development Company

Furthermore, in objective three which sought to determine the influence of top management involvement on the implementation of Enterprise Resource Planning, majority (60.3%) of the respondents indicated that there was no active involvement senior management in the implementation of ERP whereas 39.7% of the respondents indicated that there was active involvement senior management in the implementation of ERP. 54.3% of the respondents indicated that the involvement of senior management in the implementation of ERP was small. 23.3% of the respondents indicated that involvement of senior management in the implementation of ERP was in large extent. 19.9% of the respondents indicated no extent. 40.5%
of the respondents indicated that the top management focuses on technological resources, 29.7% of the respondents indicated that the top management focuses on time resources, 19.8% of the respondents indicated that the top management focuses on personnel resources. The study revealed that 39.7% of the respondents indicated that the top management sometimes prepared for challenges that might arise from ERP system. 30.2% of the respondents indicated that the top management rarely prepared for challenges that might arise from ERP system. 20.3% of the respondents indicated that the top management never prepared for challenges that might arise from ERP system.

5.2.4 Influence of Organizational Culture on the Implementation of Enterprise Resource Planning in Geothermal Development Company

Finally, with regards to objective four which sought to establish the influence of organizational culture on the implementation of Enterprise Resource Planning, Majority (70.3%) of the respondents indicated that organizational culture influences the implementation of ERP, while 29.7% of the respondents indicated that organizational culture does not influences the implementation of ERP. 60.3% of the respondents indicated that organization culture was flexible while 39.7% The respondents were asked to indicated that organization culture was not flexible. 40.5% of the respondents indicated that the organizational culture supported the implementation of ERP to a small extent. While 39.6% of the respondents indicated that the organizational culture supported the implementation of ERP to a small extent. 45.3% of the respondents strongly agreed that repositioning of roles and their meaning for actors influences the implementation of ERP. 27.6% of the respondents agreed that repositioning of roles and their meaning for actors influences the implementation of ERP.

5.3 Conclusions

From the findings of the study, it can be concluded that, that End user training affects the implementation of Enterprise Resource Planning is essential for a robust understanding of how the ERP works and how to use it, the extent of training was small this is supported by the fact that most of the respondents were not willing to undergo the ERP system training. It can also be concluded that even though that there was no a communication plan among the different departments on the implementation of ERP, communications still affected the implementation of
ERP. The study further concluded that top management involvement influences the implementation of Enterprise Resource Planning. It can finally be concluded that organizational culture influences the implementation of Enterprise Resource Planning.

5.4 Recommendations of the Study

The following were the recommendations of the study:

1. The study recommends that the end user training should be improved through organization workshops and seminars. This will reduce resistance among the employees of an organization and also increase the skills and knowledge in handling ERP.
2. The study also recommends that effective channels of communication should also be adopted. This will clarify to the employees the benefits of ERP and also increase acceptance level among employees.
3. The study further recommends that the top management should also improve on their involvement on ERP improve employees’ attitude and also provide the resources required for ERP.
4. The study finally recommends that the organization culture should be flexible to accommodate the implementation of ERP. This will promote the implementation of ERP since there will be little conflict.

5.5 Suggestions for Further Research

This study was carried out in Geothermal Development Company in Nairobi County. The study focused on the factors influencing the implementation of Enterprise Resource Planning. The researcher therefore recommends that another study be done on challenges facing Enterprise Resource Planning in Kenya which was not a concern in this study.

5.6 Contribution to the Body of Knowledge

This study contributes to the existing body of knowledge by offering a deeper insight to on factors influencing the implementation of Enterprise Resource Planning. This study has established that end user training, communication, top management and organization culture affects the implementation of Enterprise Resource Planning.
REFERENCES


Ignatiadis, I. (2007) ERP use, control and drift: an agency perspective


September, 2014

Dear Madam/Sir,

RE: REQUEST FOR DATA COLLECTION

I am a post graduate student pursuing a Masters in Project Planning and Management. I am required to submit as part of my research work assessment, a project on “FACTORS INFLUENCING THE IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING IN FIRMS”. To achieve this, you have been selected to participate in the study. I kindly request you to fill the attached questionnaire to generate data required for this study. This information will be used purely for academic purposes and will be treated in confidence and will not be used for publicity. Neither your name nor the name of your institution will be mentioned in the report.

Your assistance and cooperation will be highly appreciated.

Thank you in advance.
Yours faithful

Albert Lochilit Panga

University of Nairobi.
APPENDIX II: QUESTIONNAIRES FOR EMPLOYEES

You have been selected as a respondent in the study examining factors influencing the implementation of enterprise resource planning in firms in Nairobi County. Your responses will be treated with utmost confidentiality. Kindly provide responses without reservations as this is purely for academic purposes. Please tick as appropriate.

SECTION A: GENERAL INFORMATION OF THE RESPONDENTS

1. Gender  Male  [ ]  Female  [ ]

2. Age  19 –30 years  [ ]  31 – 40 years  [ ]
    41-50 years  [ ]  Above 51 Years  [ ]

3. Level of education Secondary education  [ ]  College  [ ]
    University  [ ]  Masters  [ ]

4. Years of service in ERP adopted Organization
   Less than 2 years  [ ]  3 – 6 years  [ ]
   7 – 10 years  [ ]  Above 11 years  [ ]

SECTION B: INFLUENCE OF END USER TRAINING ON THE IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING IN GEOTHERMAL DEVELOPMENT COMPANY

5. Do you use Enterprise resource planning system in your department?
   Yes  [ ]  No  [ ]

6. To what extent has the staff been trained on Enterprise Resource Planning systems?
   Very large extent  [ ]  Large extent  [ ]  Small extent  [ ]  No extent  [ ]

7. Did the employees accept to be trained on Enterprise resource planning systems?
   Very willing  [ ]  Willing [ ]
Less willing [ ] Not willing [ ]

8. Were you satisfied with training on ERP system?

Very satisfied [ ] Satisfied [ ]

Less satisfied [ ] Not satisfied [ ]

9. Was the feedback from the User Training incorporated into the design and implementation of the ERP Modules?

Yes [ ] No [ ] Not sure [ ]

10. How effective was the user training in the implementation of ERP System?

Very effective [ ] Effective [ ]

Less effective [ ] Not effective [ ]

11. Can you handle the demands of ERP system?

Always [ ] Sometimes [ ] Rarely [ ] Never [ ]

12. The following are some statements on the influence of end user training on the implementation of enterprise resource planning. Please indicate the level of your agreement with each statement.

1-Strongly agree 2-Agree 3-Neither agree nor disagree

4-Disagree 5-Strongly disagree

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<td>End user training is essential for a robust understanding of how the ERP works and how to use it.</td>
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<td>Training required for the end-users on ERP is very extensive and expensive.</td>
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<td>Knowledge level and skills about a specific IT tool that a trainee can achieve by the end of a training course affects the implementation of ERP.</td>
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13. Have you attended post implementation training?

Yes [ ] No [ ]

SECTION C: INFLUENCE OF COMMUNICATION ON THE IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING IN GEOTHERMAL DEVELOPMENT COMPANY

14. Does your organization have proper channels of communication?

Yes [ ] No [ ]

15. How effective are the channels of communication?

Very effective [ ] Effective [ ]
Less effective [ ] Not effective [ ]

16. Is there a communication among the different departments?

Yes [ ] No [ ] Not sure [ ]

17. Which of the following communication tools is very effective in your organization?

Newsletters [ ] Monthly bulletins [ ] Weekly meetings [ ]

18. Were you informed about the scope, objectives, activities and updates of ERP in advance?

Yes [ ] No [ ] Not sure [ ]

19. The following are some statements on the influence of communication on the implementation of enterprise resource planning. Please indicate the level of your agreement with each statement.

1-Strongly agree 2-Agree 3-Neither agree nor disagree 4-Disagree 5-Strongly disagree

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the implementation process increases success for ERP implementation

Communication assists the ERP adopting company to minimize user resistance.

Effective communication can also represent broadcasting the meanings and benefits of ERP adoption to employees.

SECTION D: INFLUENCE OF TOP MANAGEMENT COMMITMENT ON THE IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING IN GEOTHERMAL DEVELOPMENT COMPANY

20. Is there active involvement senior management in the implementation of ERP?

Yes [ ] No [ ] Not sure [ ]

21. What is the level of involvement of senior management in the implementation of ERP?

Very large extent [ ] Large extent [ ] Small extent [ ] No extent [ ]

22. What type of support does top management focus on most?

Financial [ ] Personnel resource [ ]

Technological resources [ ] Time resource [ ]

23. Has top management set policies on ERP system usage?

Yes [ ] No [ ] Not sure [ ]

24. Is the top management prepared for challenges that might arise from ERP system?

Never [ ] Rarely [ ] Sometimes [ ] Always [ ]

25. Is there cross functional teamwork among managers?

Yes [ ] No [ ] Not sure [ ]
26. The following are some statements on the influence of top management on the implementation of enterprise resource planning. Please indicate the level of your agreement with each statement.

1-Very large extent
2-Large extent
3-Neutral
4-Small extent
5-No extent

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<td>Top management commitment is needed throughout the ERP adoption process because the ERP project must receive approval and align with strategic business goals.</td>
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ECTION E: INFLUENCE OF ORGANIZATIONAL CULTURE ON THE IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING IN GEOTHERMAL DEVELOPMENT COMPANY

27. Does organizational culture influence the implementation of ERP?

Yes [ ]
No [ ]

28. Is organization culture flexible?

Yes [ ]
No [ ]

29. To what extent has the organizational culture supported the implementation of ERP?

Very large extent [ ]
Large extent [ ]
Small extent [ ]
No extent at all [ ]

30. The following are some statements on the influence of organizational culture on the implementation of enterprise resource planning. Please indicate the level of your agreement with each statement.

1-Strongly agree
2-Agree
3-Neither agree nor disagree
4-Disagree
5-Strongly disagree
If cultures of producers and users of ERP are different it results in a cultural clash.

Organizational culture enforces rules, values and practices at the organizational and individual levels.

Repositioning of roles and their meaning for actors influences the implementation of ERP.

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31. What would you recommend to be done to improve the implementation of Enterprise Resource Planning?

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__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

*Thank you for your co-operation*
APPENDIX III: QUESTIONNAIRES FOR HEAD OF DEPARTMENTS

You have been selected as a respondent in the study examining factors influencing the implementation of enterprise resource planning in firms in Nairobi County. Your responses will be treated with utmost confidentiality. Kindly provide responses without reservations as this is purely for academic purposes. Please tick as appropriate.

SECTION A: GENERAL INFORMATION OF THE RESPONDENTS

1. Gender Male [ ] Female [ ]
2. Age 19 – 30 years [ ] 31 – 40 years [ ]
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5. Do you use Enterprise resource planning system in your department?
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7. Did the employees accept to be trained on Enterprise resource planning systems?
   Very willing [ ] Willing [ ]
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8. Were you satisfied with training on ERP system?

Very satisfied [   ] Satisfied [   ]

Less satisfied [   ] Not satisfied [   ]

9. Was the feedback from the User Training incorporated into the design and implementation of the ERP Modules?

Yes [   ] No [   ] Not sure [   ]

10. How effective was the user training in the implementation of ERP System?

Very effective [   ] Effective [   ]

Less effective [   ] Not effective [   ]

11. Can you handle the demands of ERP system?

Always [   ] Sometimes [   ] Rarely [   ] Never [   ]

12. The following are some statements on the influence of end user training on the implementation of enterprise resource planning. Please indicate the level of your agreement with each statement.

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4-Disagree 5-Strongly disagree

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Yes [   ] No [   ]

28. Is organization culture flexible?

Yes [   ] No [   ]

29. To what extent has the organizational culture supported the implementation of ERP?

Very large extent [   ] Large extent [   ] Small extent [   ] No extent at all [   ]

83
30. The following are some statements on the influence of organizational culture on the implementation of enterprise resource planning. Please indicate the level of your agreement with each statement.

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31. What would you recommend to be done to improve the implementation of Enterprise Resource Planning?

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*Thank you for your co-operation*
## APPENDIX IV: KREJCIE AND MORGAN'S TABLE

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APPENDIX V: RESEARCH AUTHORIZATION LETTER

UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EXTRA-MURAL CENTRE

Your Ref: 
Our Ref: 
Telephone: 318262 Ext. 120

Main Campus
Gandhi Wing, Ground Floor
P.O. Box 30197
NAIROBI

16th October 2014

REF: UON/CEES/NEMC/19/189

TO WHOM IT MAY CONCERN

RE: ALBERT LOCHILIT PANGA - REG NO L50/82584/2012

This is to confirm that the above named is a student at the University of Nairobi College of Education and External Studies, School of Continuing and Distance Education, Department of Extra-Mural Studies pursuing Master of Arts in Project Planning and Management.

She is proceeding for research entitled “factors influencing implementation of enterprise resource planning in firms” A case of Geothermal Development Company in Nairobi, Kenya.

Any assistance given to him will be highly appreciated.

CAREN AWILLY
CENTRE ORGANIZER
NAIROBI EXTRA MURAL CENTRE
APPENDIX VI: RESEARCH PERMIT