ASSESSMENT OF ENTERPRISE RESOURCE PLANNING SYSTEMS (ERP) IN TANZANIA: A CASE OF SERENGETI BREWERIES LIMITED (SBL)
ASSESSMENT OF ENTERPRISE RESOURCE PLANNING SYSTEMS (ERP) IN TANZANIA: A CASE OF SERENGETI BREWERIES LIMITED (SBL)

By
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A Dissertation Submitted in Fulfillment of the Requirements for Master Science in Procurement and Supplies Chain Management (Msc.PSCM) of Mzumbe University

2013
CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled Assessment of the Enterprise resource Planning systems in Tanzania organizations: The case study of Serengeti Breweries Limited, in fulfillment of the requirements for award of the degree of Master of Science in Procurement and Supplies Chain Management of Mzumbe University.

Signature

___________________________
Major Supervisor

Signature

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Internal Examiner

Accepted for the Board of

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I, Japhet Stephen Mtuveta, declare that this thesis is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

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Finally, but most importantly, this research would not have been possible without all the love and steadfast support of my parents, Sisters and Brother. This dissertation is dedicated to my Girlfriend, Martha Joseph, and my son Ivan Japhet with all my heart.
# LIST OF ABBREVIATION

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
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<tr>
<td>CFS’s</td>
<td>Critical Success Factors</td>
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<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
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<tr>
<td>HL</td>
<td>Hectoliters</td>
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<td>MRP II</td>
<td>Manufacturing Resource Planning II</td>
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<tr>
<td>MRP</td>
<td>Materials resource planning</td>
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<tr>
<td>MSD</td>
<td>Medical Stores Department</td>
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<tr>
<td>R</td>
<td>Rating average</td>
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<tr>
<td>SAP</td>
<td>Systems, Applications and Products</td>
</tr>
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<td>SBL</td>
<td>Serengeti Breweries Ltd</td>
</tr>
<tr>
<td>SEM</td>
<td>Equation modeling</td>
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<td>SMEs</td>
<td>Small and Medium Enterprises</td>
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ABSTRACT

Enterprise Resource Planning (ERP) systems is of particular importance to many companies in these years of technological advancement, the continuous national economic reform and entrance of foreign companies to the increasingly Tanzania business market, has significantly changed Tanzania business status quo. Faced with this competitive environment and economic pressure, some of the Tanzania companies have implemented ERP systems in order to improve operational efficiency and enhance core competencies. However, the adoption of ERP is not a straight forward task and can always result in significant impact to all business divisions in operational, managerial and strategic level of the company.

Implementing ERP system project is a difficult and high cost proposition as it places tremendous demands on organization’s time and resources. Many organizations do not achieve success in the implementation of ERP since companies are faced with a number of complexities when implementing these systems. Therefore this study aims at finding the Critical success factors (CSFs), the barriers encountered during implementation of ERP and propose the best approach on implementation of ERP to avoid failures.

The study ranked the intensity of each CSF by using rating average method depending on the respondent’s opinions on the critic of each of the success factor. The sample size for this study was 48 peoples who are the users of ERP system, the response rate was 72.9% equal to 35 respondents returned the questionnaires on time. The result indicated that Top management support, Technological infrastructure, Communication, Process redesign, Clear goal and objectives, Project management, Change management, Project team work, User training and User involvement are key factors influencing the overall success of an ERP implementation.

The outcome of this study would throw light on the areas where more attention needs to be paid towards facing the successful ERP implementation and related barriers with minimal impact.
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CHAPTER ONE

INTRODUCTION

This chapter gives the background to the research problem, statement of the problem, research objectives, research questions, significance and organization of the study.

1.1 Background Information
The business environment is dramatically changing. Companies today face the challenge of increasing competition, expanding markets, and rising customer expectations. This increases the pressure on companies to lower total costs in the entire supply chain, shorten throughput times, drastically reduce inventories, expand product choice, provide more reliable delivery dates, provide better customer service, improve quality, improve efficiently, and coordinate global demand, supply and production. Organizations are continually facing challenges that incite them to rethink and adapt their structures, goals, processes and technologies. They must act promptly and make those changes to sustain their competitive advantage.

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. And functions within the company must upgrade their capability to generate and communicate timely and accurate information.

To accomplish these objectives, companies turned and adopted Enterprise Resource Planning (ERP) systems as enablers to facilitate related shifts and become more adaptable so as to operate better in such dynamic business environments (Kwahk et al., 2008; Beheshti, 2006).

ERP system is a business management system that encompasses different software components aimed at managing, integrating and optimizing all business processes within an organization. Researchers estimated investments in ERP implementations at around US$ 300 Billion in the last decade. Specifically in 2004, expenditures were expected to reach around US$ 79 Billion (Carlino et al., 2000). These facts are a strong reference
point on the priority and importance that current business environment attach to adopting ERPs.

ERP provides benefits that do not exist in non-integrated departmental systems, it is able to integrate and control business processes, departments such as Sales and Marketing, Production, Manufacturing, Inventory, Human resources, Finance and many other departments were integrated through interdependent modules in the ERP. Other studies have also analyzed ERP systems’ impact on revenue-creating core processes, such as customer services, sales and distribution, resulting in a strong bottom line (Davenport, 2000). In an empirical research, Hitt et al. (2000) reveal that organizations committed to implementing ERP performed better across a wide variety of financial metrics.

Also ERP system has developed new facilities to meet the requirements of the user organizations, it is a database where all business transactions are entered, recorded, processed, monitored, and reported. This unified view increases the requirement for, and the extent of, interdepartmental cooperation and coordination. But it enables companies to achieve their objectives of increased communication and responsiveness to all stakeholders. This has been a moving target. Down to its fundamental since its introduction to the market, ERP software has been seen as an off-the-shelf instrument for improving business processes.

Today, many public and private organizations worldwide are implementing ERP systems in place of the functional legacy systems that are not anymore well-compatible with modern business environment. However, according to Kroenke (2008), the process of moving from functional applications to an ERP system is difficult and challenging. Additionally, ERP as an integration of hardware technology and software has a very high investment value, the switch to ERP system is expensive and it requires development of new procedures, training and converting data. However, a larger capital investment on ERP does not always give a more optimal return value to the company.

The implementation of ERP has become a challenging task to many organizations in the world. It involves the analysis of current business processes and the services they provide, their handling through bought software rather than designing an application system from scratch and internal control activities necessary to keep the system functioning at all times. The target is integration of middle and lower senior management functions, keeping in mind that business processes are complex.
In Tanzania very little has been done concerning ERP. In recent years some of the Tanzania companies’ particularly private companies have adopted the use of ERP in their daily operations, but the adoption of ERP in Tanzania companies is very slow. Few literatures are found concerning ERP implementation especially in Tanzania perspective.

Therefore this study assessed the ERP implementation in Tanzania companies to contribute to the literature review of ERP implementation in Tanzania perspective while adding substance to the existing theory developed by previous authors. The factors for the successful implementation were described in this study and the problems encountered during the implementation of ERP were investigated. Consequently, results of the data collection and analysis resulted in recommendations that can help companies make better decisions about future ERP systems implementation.

1.2 Objectives of the study
Research objective explains the purpose of this study and it contains the General objectives and the specific objectives of the study.

1.2.1 General objectives
The general objective of the study is to assess the implementation of ERP in Tanzania companies.

1.2.1 Specific objectives
   i. To find out the critical success factors (CSFs) of ERP implementation.
   ii. To find out the barriers encountered during implementation.
   iii. To propose the best approach on implementation of ERP to avoid failures.

1.3 Research Questions
   i. What are the critical success factors of ERP implementation?
   ii. What are the barriers encountered during the implementation of ERP?
   iii. Which is the best approach on implementation of ERP?

1.3.1 Significance of the study
Though a limited number of studies have been done regarding the implementation of ERP, this study discussed implementation of ERP in different perspective and in different contexts give out the best ways of successful implementation and how to avoid the
barriers to the successful implementation. This study attempts to contribute to a research gap that is becoming increasingly important in the field, namely ERP implementation within Tanzania context. It is expected to be of particular interest to ERP researchers, practitioners and user companies, and even ERP vendors and system consultants.

It will widen the knowledge of a researcher and other readers on the topic and help organizations to gain a better understanding of ERP implementation success factors and the barrier that could prevent the successful implementation of an ERP system.

1.4 Historical Background of the Organization of Study
Serengeti Breweries Limited (SBL) is the second largest beer company in Tanzania, with its own brands account for 15% of the market by volume and when with EABL’s portfolio, accounts for approximately 28% of Tanzania branded beer sector.

The company was incorporated in 1988 as Associated Breweries Limited and changed its name to Serengeti Breweries Limited in 2002.

SBL’s headquarters are in Dar es Salaam, Tanzania. The previous owners and management of SBL acquired the company in 2002 and commenced on a strategy of rapid expansion which has resulted in outstanding growth. EABL acquired 51% of the issued share capital of SBL in October 2010.

At present, SBL has three operating plants spread out across the country, the Dar es Salaam plant has production capacity of 350,000 HL, the Mwanza plant has a capacity of 650,000 HL while the state-of-the-art brewery in Moshi which was commissioned in January 2012 has a production capacity of 500,000 HL expendable to 800,000 HL.

Since the creation of SBL in 2002, the business has grown from strength to strength and the acquisition by EABL has seen increased investment in further growth leading to greater job opportunities for the people of Tanzania.

VISION
To be the most celebrated business in every market in Eastern Africa.

MISSION
Celebrating life every day, everywhere.

OUR VALUES
Our values are the heart of our business. They form critical element of our corporate strategy, influencing the way we work every day and everywhere.

We are passionate about consumers: Our curiosity and consumer insight drive our growth. We cherish our brands and we are creative in pursuing their full potential. We are innovative constantly search for new ideas that drive growth and developing them across the business.

We value each other. We seek and strive for inclusion and diversity, mutually fulfilling relationship and partnerships and respect for people’s lives.
We give ourselves and each other the freedom to succeed. We trust each other, we are open to challenges and we respond quickly to the opportunities this creates.
CHAPTER TWO

LITERATURE REVIEW

This chapter reviews concepts, theories, and previous research findings from available literature relating to the statement of the problem and research objectives, for the purpose of establishing a theoretical and empirical base for the study. It aims at avoiding misunderstandings and should help the reader understand the basic conceptions on which this research work is based.

2.1 Theoretical Literature review
Theoretical literature review analyzes, evaluate, and summarize scholarly materials which focus on ERP implementation. It reviews definitions of ERP from different scholars, explain the evolution of ERP, point out the advantages and disadvantages of ERP, explain the different types of ERP software with its major vendors and lastly review the models and theories from other researchers.

2.1.1 Definition of Key Terms and Concepts
This section defines different terms and concepts related to the research study, the definitions and concepts are expected to give an understanding and clear direction of the whole research work.

2.1.1.1 Enterprise Resource Planning (ERP)
According to Chang et al. (2008), the term ERP was formally used first by the Gartner Group in the early 1990s. In their definition, the ERP term designates an integrated set of software packages intended to tie together various business processes such as financial, human resources, supply chain and logistics. Nonetheless, there is no single accepted definition on this technology and research usually describes the functionality of ERP to position this concept.

According to Jay Heizer and Barry Render (2011), ERP is an information system for identifying and planning the enterprise-wide resources needed to take, make, ship, and account for customer orders. ERP software allows companies to automate and integrate,
share a common database and business practices throughout the enterprise, and produce information in real time.

Klaus et al. (2000) describe ERP systems as “comprehensive, packaged software solutions that seek to integrate the complete range of a business’s processes and functions in order to present a holistic view of the business from a single information and IT architecture.”

O’Leary (2000) describes ERP systems as “computer-based systems designed to process an organization’s transactions and facilitate integrated and real-time planning, production, and customer response.”

Moon (2007) presents ERP as “an enterprise information system designed to integrate and optimize the business processes and transactions in a corporation”.
Kamhawi (2007) outline an ERP system as “comprehensive software packages that seek to integrate the complete range of business processes and functions in order to present a holistic view of the business from a single information and information technology architecture.”

From the perspective of many users, ERP system is the information backbone that supports every business function, from sales orders entry to post-sale customer service.

But unlike other information technology (IT) systems, ERP implementations have encouraged companies to shift from the traditional “functional silos” paradigm to an organizational paradigm focusing on planning and execution. This new paradigm will definitely reshape business processes, allowing organizations to take advantage of the new automated, real-time and seamless value-added capabilities offered. ERP’s promise is to provide an information technology platform aimed at improving “how business is done”, allowing organizations to plan and manage their resources in an efficient, productive and profitable manner (Laukkanen et al., 2007).

In its basic definition ERP is an enterprise-wide application software package that integrates all necessary business functions into a single system with a common database. ERP systems integrate and streamline the business process of an organization across departmental and geographical borders.
2.1.1.2 Evolution of ERP

The legacy systems which were constituted by the early enterprise systems solved particular departmental needs within organizations, but the systems lacked the ability to integrate themselves. Therefore, it was usual to collect and process the same information multiple times in different places, creating a serious challenge when decision makers tried to retrieve the right piece of information in real time. This platform generated serious asymmetries between different functional groups within the same organization (Kang et al, 2008). Organizations realized that those systems should be integrated to gain efficiencies. Manufacturing Resource Planning system, or MRP, was the first response to overcome such problems.

Material requirements planning (MRP) which evolved as the basis of ERP is the dependent demand technique that uses a bill-of-material, inventory, expected receipts and a master production schedule to determine material requirements. Basically MRP were inventory control systems focusing on materials and planning control (Jay Heizer and Barry Render, 2011).

These systems were comprised of a set of decision rules designed to translate a master production schedule into concrete time-phased requirements (Orlicky, 1975). In the early eighties, these systems were expanded in scope and incorporated additional capabilities to support other business functions such as production, marketing, sales and finance. Once a firm has MPR in place, requirements data can be enriched by resources other than just components and when MRP is used in this way, resource is usually substituted for requirements, and MRP becomes MRP II a very extremely powerful technique. In other words MRP II is a system that allows, with MRP in place, inventory data to be augmented by other resources variables. Therefore the extension of MRP was called Manufacturing Resource Planning II (MRP II) (Barker, 2001).

But, although MRP II made significant progress in bringing together diverse processes and units within the organization, as Chung et al. (2000) states, it still failed in becoming a real enterprise-wide system, because of issues relating to its interoperability, interfacing, protocol incompatibility and ability to cover additional business processes. To overcome the insufficiencies of MRP II, mainly those referring to integration flaws, a new generation of information technologies came to the scene and started evolving
These new systems were known as “enterprise resource planning” systems, a term coined by Gartner Group (Ragowsky et al. 2002). ERP systems constituted the natural evolution of Material Resource Planning (MRP) solutions that emerged in the seventies (Davenport, 1998), integrating not only manufacturing processes, but also linking the wide spectrum of business functionalities and processes required within any organization. ERP systems emerged to honor the promise to flawlessly integrate the information from an entire enterprise, including processes such as production, customer orders, inventory, purchasing, sales and distribution, human resources, and supply chain (Kang et al, 2008).

Since then, ERP systems have been acknowledged as one of the most innovative developments in the information technology arena (Al-Mashari, 2003A). By 1999, 70 percent of Fortune 1000 companies had either adopted or were in the process of implementing ERP systems (Brazel et al., 2008) (Cerullo et al., 2000).

2.1.1.3 Advantages and Disadvantages of ERP
ERP systems can support a company’s work in many ways. Since ERP systems integrate all parts of a company seamlessly, more proper control is possible. ERP systems are able to minimize redundant data registration, control data produced by different departments, and reduce registration errors. The interconnectivity among all the modules of ERP systems reduces the time to perform the different operational tasks, so the company’s efficiency can be increased. ERP systems enable users to access timely information and accurate reports can be produced at any time.

The main reasons that companies undertake ERP systems are summarized as follows (Koch 2002):

i. Integrate financial information
   Finance has its own set of revenues, sales, costs, and other information. Different business units may have their own versions of how much they contribute to revenues. ERP systems create a single version of the information that cannot be questioned because all members of a company are using the same system.

ii. Integrate customer order information
ERP systems can become the platform for where the customer order stays from the time a customer service representative receives it until the merchandise is shipped and an invoice sent. By having this information in one integrated system rather than scattered among many different systems that cannot communicate with one another, companies are able to keep track of orders more easily and coordinate other related departments with them across many different locations at the same time.

iii. Standardize and speed up manufacturing processes
Many companies often find that multiple business units across the company, e.g., following a merger or acquisition, make the same product part using different methods and computer systems. ERP systems use standard methods for automating some of the manufacturing process steps. Standardizing these processes and using a single, integrated system can save time, increase productivity, and reduce product cycle time.

iv. Reduce inventory
ERP systems can make the manufacturing process flow more efficiently, and it improves observation ability of the order processing inside the company. This can lead to reduced inventories of the parts used to make products, and can help users make better planned deliveries to customers, reducing the finished product inventory at the warehouses and shipping docks.

v. Standardize HR information
ERP can fix the HR problem of a company that may not have a unified, simple method for tracking employees' time and communicating with them about benefits and services, especially in the case of companies with multiple business units.

While there can be many advantages of ERP systems, as described above, there are also several disadvantages. The implementation costs of ERP systems are so high that this prohibits small and medium businesses from acquiring such systems. In addition, ERP systems require considerable time to implement in a company, and they may slow down the routine operations within a company during the implementation period. Since this integrated system has to be well-defined in the beginning of implementation, it will be difficult to change it
afterwards. The criticisms of ERP systems are summarized as follows (Davenport 2000):

a. Inflexibility
Once an ERP is installed in a company, it is too difficult to change how the company works and is organized. ERP systems are like cement, which is highly flexible in the beginning, but rigid afterward.

b. Long implementation periods
It takes too long to implement ERP systems. A three to five year implementation period of ERP systems is fairly common in a large company. In the current rapidly changing business world, five and even ten year projects are not supportable.

c. Overly hierarchical organization
ERP systems presume that information will be centrally monitored and that organizations have a well-defined hierarchical structure. Therefore, these systems will not match with organizations of empowerment or with employees as free agents.

2.1.1.4 Major Vendors of ERP systems

- SAP
The first company which introduced a functional enterprise system was SAP AG, headquartered in Walldorf, Germany. Five software engineers at IBM in Germany had the idea for a cross-functional information system. However, the idea was rejected by IBM, so the engineers founded their own company in 1972. R/2, SAP’s earliest integrated system, ran on mainframes. R/3, the next version of the system, was a client/server system introduced in 1992. mySAP ERP, the successor to SAP R/3, is the first service-oriented business application on the market based on SAP NetWeaver, an open integration platform that allows new applications to be developed. In 2005, SAP had about 26,150 customers, 12 million users, 88,700 installations, more than 1,500 partners and a share of over 30 percent of the ERP market. SAP is the world's largest inter-enterprise software
company and the world’s third largest independent software supplier (Davenport 2000; SAP 2005).

SAP’s strength is the breadth and extensive capability of its software’s functionality, even though it leads to complexity in the system and its implementation. SAP spends much more on R&D than any other competitor and is most likely to introduce new functionality as a result (Davenport 2000). In 2003, SAP NetWeaver became the first platform to allow seamless integration among various SAP and non-SAP solutions, reducing customization and solving the integration issue at the business level. The solution of SAP regarding the integration issue is the use of open standards that allow software applications to be accessed as web services. With SAP NetWeaver, customers could pick and choose the specific SAP web services modules that met their own needs.

It delivers much more valuable business functions, such as order management, with the flexibility of web services (SAP 2005).

- **Oracle**
  Oracle Corporation was first founded by Larry Ellison in 1977 as a database company. Oracle technology can be found in nearly every industry around the world; its database offering is the most popular repository of ERP data. Oracle began to develop its own business applications in the late 1980s, the early version of the applications coming from co-development projects with customer companies. Its ERP package, named Oracle E-Business Suite, has almost 50 different modules in seven categories: Finance, Human Resources, Projects, Corporate Performance, Customer Relationship, Supply Chain, and Procurement. It also offers industry-specific solutions, most of which were acquired from companies that had developed them to a certain degree.

  Currently, Oracle has developed 100 percent internet-enabled enterprise systems across its entire product line: databases, business applications, and application development and decision support tools. Oracle is the world’s leading supplier of software for information management, and the world’s second largest independent software company overall (Davenport 2000; www.oracle.com 2005).
In 2005, Oracle closed the gap with SAP in the ERP market by buying PeopleSoft Inc. for $10.3 billion. Previously, PeopleSoft Inc. merged with J.D. Edwards, so Oracle now has three different product lines in enterprise solutions: Oracle’s “E-Business Suite,” PeopleSoft’s “Enterprise,” and J.D. Edwards’s “EnterpriseOne” and “World.” Oracle fusion is the new combined company plan which incorporates the best features and usability characteristics from Oracle, PeopleSoft, and J.D. Edwards products. The successor product Oracle Fusion is expected to evolve over time and incorporate a modern architecture, including the use of web services in a service-oriented architecture. The outcome will be the best in exceptionally deep and flexible process automation, as well as high quality, real-time information (www.oracle.com 2013).

Among the Oracle product lines, PeopleSoft Enterprise enables organizations to reduce costs and increase productivity by Pure Internet Architecture, directly connecting customers, suppliers, partners, and employees to business processes on-line, in real time. PeopleSoft's integrated applications include Customer Relationship Management, Supply Chain Management, Human Capital Management, Financial Management and Application Integration. J.D. Edwards EnterpriseOne, suitable for large organizations, is the complete solution for modular, pre-integrated industry-specific business applications designed for rapid deployment and easy administration on pure internet architecture. J.D. Edwards World is ideally suited for small businesses because of its reliable, functionality-rich, web-enabled environment for managing plants, inventories, equipment, finances, and people. It is synchronized, integrated, and pre-bundled enterprise software on a single database, which reduces implementation cost and complexity (www.oracle.com 2013).

2.1.1.5 Different types of ERP Software:
In recent years different types of ERP has been developed such as;

i. SAP R/3- a software from SAP which is the world’s leading provider of business software. SAP runs in more than 120 countries worldwide with more than 86000 customers.

ii. SAP B1 (business one) - is the software also from SAP. It is made for small SME (small and medium enterprise) segment to fulfill their requirement at lower cost.
iii. LN/BaaN- is the software from Infor Global offers the breadth and depth of support for orders-driven, projects discrete manufacturing. It increase user productivity, operational efficiency, better control of processes, better communication and collaboration, enhance performance and scalability, leverage IT infrastructure and information assets and reduce costs. LN is ideal for companies in make-to-stock, assemble-to-order, make-to-order, or engineer-to-order environments.

iv. Microsoft Dynamics AX 2009 (Microsoft Axapta) - is a comprehensive enterprise solution for mid-sized and large organizations to help people improve productivity. Microsoft Dynamics ERP applications and services made for retailers, manufacturers, wholesale distributors, and service companies, doing business domestically or in multiple countries.

v. Microsoft Dynamics NAV (Microsoft Navision) - is ERP software to assist with finance manufacturing, CRM (Customer relationship management), SCM (Supply chain management), analytics and e-commerce for small and medium-sized enterprises.

vi. JD Edward enterprises One- is an integrated applications suite of comprehensive enterprise resource planning software from Oracle that combines business values, standards-based technology, and deep industry experience into business solution with a low total cost of ownership.

vii. Oracle E-Business Suite Financials- is easy to operate shared services across businesses and regions. It delivers pre-integrated financial and industry-specific processes. It provides consistent financial and operational information, dynamics planning, budgeting and forecasting, multi-dimensional profitability analysis, etc.

viii. Oracle PeopleSoft Enterprise- this application is designed for the most complex business requirements. They provide comprehensive business and industry solutions, enabling organizations to significantly improve performance, seamlessly integrate Web services into heterogeneous application environments, and broad choice of technology infrastructure.

2.2 Models and theories from other researchers
These days ERP has become of great importance to organizations in integrating and streamline the business processes of an organization across departmental and geographical borders. The implementation and the go live for ERP is something of
challenge to many organizations, some implementations were successful and some of them failed due to different reasons.

Miguel Maldonado (2009) investigated the factors impacting the success of ERP implementation in SMEs operating in developing regions such as Latin America. He used D &M model one of the most widely accepted model in the area of IS success, the proposed model is corroborated empirically with data from 49 Latin American SMEs. The regression analysis technique allows corroborating 7 of the 8 hypotheses. Some results are consistent with previous research but others seem to be unique to the Latin American context. These results indicate that Ease to Use the capacities provided by ERP, as well as Project Implementation Success and User Satisfaction of an ERP initiative are key factors influencing the overall success of an ERP implementation. However, Change Management seems to be not as critical as the other factors. The crucial role of User Satisfaction as a mediating variable is also corroborated. The success of an ERP implementation is measured in terms of improvements in business performance.

BooYoung Chung (2007) analyzed the success and failure factors for ERP systems in Engineering and Construction firms. The data was collected from 281 respondents from different countries, 22% of respondents use SAP and 44% of respondents use Oracle. The researcher used t test analysis or Analysis of Variance (ANOVA) to compare the samples, then he used regression analysis to examine the relationship between factors and indicators and lastly he conducted structural Equation modeling (SEM) to examine the validity of the proposed research model as a complimentary analysis. He found that ERP benefits are a final measure of ERP success, which means the more successful the ERP system the more ERP benefits the company, can gain. Another main finding of the research is about the ERP project success. Project success is generally evaluated in terms of time, cost, quality and scope. The researcher found that the progress of the ERP implementation project does not have an impact on ERP benefits while the quality and scope of the ERP system has a significant impact.

Vijay M. Khaparde (2012) reviewed the literature papers and find out the barriers of ERP. Out of 200 or so literature papers were reviewed for barriers and studied in depth. He used analytical hierarchical process (AHP) as a tool or research methodology. Analytic hierarchy process (AHP) has been used to calculate the pair wise combination of
the barriers in and consistency ratio (CR) & consistency index (CI) can be calculated depending upon their constructs. The results of this study show that the barriers which are common are internal factors and external factors in an enterprise and cannot be overlooked while implementing ERP. It shows that the barriers of ERP are mostly observed in large and in SMEs. The reasons for occurring the barriers while implementing ERP are because of many things, the barriers which are commonly observed are- huge capital incurred for software, poor planning or poor management, lack of perfection, lack of training and predetermined corporate goals, lack of good vendors, lack of risk assessment, lack of approach, lack of data models (support), lack of ERP Systems' benefits, lack of system performance, lack of hierarchical attribute structure and lack of management support etc.

Raveendran and Somu (2012) studied the Barriers Affecting the Successful Implementation of ERP applications, the study investigated the barriers under different contexts, being faced by companies during and after implementing the prestigious ERP project. The objectives and modalities of the authors were to identify the barriers, interpret and analyze the intensity of the same and throw out the correlation among barriers. They selected a sample of 50 Indian companies and the problems/barriers encountered during implementation were categorized as ERP products/Application related, People (stake holders) related, Project cost overrun related, Project schedule overrun related, Implementation partner (Agency) related, Technical issues and General ones (Strategic in nature like Change Management, Project Management, training, involvement of the Management).

The respondents during the study were asked to rank the intensity of the barriers under each and every category, separately. By using ranking weighted average the researchers found a strong correlation of the barriers and as per consolidated statistics on ERP success, compiled over multiple surveys, 50 to 70 percent of the projects are reported as challenged in some respect, usually the project is late, or it is over budget, or the system is implemented with less than hoped for functionality.

Guo Chao and Miguel Baptista Nunes conducted a study under the title ‘A discussion of barriers to successful exploitation of ERP systems in the context of Chinese state owned enterprises (SOE)’, The study adopted a deductive research design by using a cross-sectional questionnaire survey. The questionnaire design was based on a theoretical
ontology of barriers drawn from a systematic literature review. The questionnaire was sent to 118 selected Chinese SOEs, from which 42 valid and usable responses were received and analyzed. Nine barriers were identified as critical among 25 pre-defined barriers under cultural (CB), organizational (OB) and system (SB) focus areas. And, as per them, there are clear correlations among these barriers.

Multiple parameters or attributes and their relation to the ERP implementation were analyzed in their study. The findings of this study identified that managers in Chinese SOEs often perceived system barriers as most critical to ERP exploitation, but they seemed to overlook the fact that organizational barriers are the mainly triggers of the complicated network of ERP barriers and thus are in reality more important than the system ones.

Marcus et al (2000) recognize the need to understand the antecedents of ERP’s success and the underlying explanations. They accentuate that this understanding is critical when reviewing the ERP field because of the high costs and risks involved in these projects. They even acknowledge that in many of the cases, the failure of ERP adoption processes may have led to the organization’s bankruptcy.

Their substantial contributions lay in two focal issues identified Measurement of Success and Timing and Measurement of Success.

To address both issues, they propose to analyze ERP’s success using a process approach, i.e. to assess success at three different stages during the ERP adoption experience or “ERP experience cycle” as they called it.

Markus et al. model (2000a) proposes three stages describing the ERP adoption process and the underlying metrics of success tied to each phase. Table 2.1 summarizes these stages and the related success metrics.
Table 2.1 ERP Stages and underlying success metrics.

<table>
<thead>
<tr>
<th>Phase in the ERP Experience Cycle</th>
<th>How to measure success in the phase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Phase:</strong> ERP is configured and rolled out to the Organization.</td>
<td>Project cost relative to budget. Project completion time relative to schedule. Completed and installed system functionality relative to original project scope.</td>
</tr>
<tr>
<td><strong>Shakedown Phase:</strong> Organization makes transition from “go-live” to “normal operations” using the ERP.</td>
<td>Short-term changes occurring after system ‘go-live’ in key business performance indicators such as operating labor costs. Lengths of time before key performance indicators achieve ‘normal’ or expected levels. Short-term impacts on the organization’s adopters, suppliers and customers such as average time on hold when placing a telephone order.</td>
</tr>
<tr>
<td><strong>Onward and Upward Phase:</strong> Organization captures the majority of business benefits/business improvements from ERP systems.</td>
<td>Achievement of business results expected for the ERP project, such as reduced IT operating costs and reduced inventory carrying costs. Ongoing improvements in business results after the expected results have been achieved. Ease in adopting new ERP releases, other new ITs, improved business practices, improved decision making, etc., after the ERP system has achieved stable operations.</td>
</tr>
</tbody>
</table>

Source: Markus et al. (2000a). Learning from adopters’ experiences with ERP

2.3 Empirical Literature review
In Tanzania limited studies has been conducted in the ERP implementation area, with most research consisting of studies in individual organizations which can be described as “how I implemented ERP in my company” case. The authors were typically employees of (or consultants to) the company described in the case. A major problem with such ERP case studies is that very few implementation success or failures are recorded in the literature, perhaps because few companies wish to publicize how they went through the implementation process. That is the reasons why ERP implementations were not recorded in the literature, which motivates empirical studies to explore the ERP implementation in Tanzania organizations.

One of their bulletin of April 2012, Tanzanian Medical Stores Department (MSD) published they will mark the implementation of the first ever ERP in a public health
logistics system in Africa. ERP will link MSD’s business strategy to operational reality and bring profound changes in the way work is done across the organization by facilitating discipline in and organization to business processes. Before starting implementing the system MSD studied ERP industry implementation from US, the Industry research on ERP implementations conclude that the average ERP project costs $8.2 million US and experiences an average budget overrun of $2 million US. Over 70% of all ERP projects faced budget issues. Top reasons cited for overruns were that the initial project scope was expanded, and unanticipated technical or organizational change management issues resulted in additional costs. Because of these reasons, over 50% of all ran behind schedule. MSD has faced unexpected and complex obstacles related to implementing an ERP which is first of its kind; they were faced with the additional of time of implementation and the Fund where by the planned budget exceeded.

On the Journal of Information technology Markus et al (2000,) learned the problems encountered and success achieved from adopters experiences with ERP. The findings showed that the success of ERP systems depends on when it is measured and that success at one point in time may only be loosely related to success at another point in time. Companies experience problems at all phases of the ERP system life cycle and many of the problems experienced in later phases originated earlier but remained unnoticed or uncorrected. These findings suggest that researchers and companies will do well to adopt broad definitions and multiple measures of success and pay particular attention to the early identification and correction of problems.

Lack of collaboration and communication between functional departments has been identified as a crucial barrier to successful introduction of ISs in western companies (Beatty and Gordon, 1988; Fletcher and Wright, 1995). In Chinese firms, strong competition may exist between diverse functional departments, thus discouraging staff in different divisions to collaborate and communicate with each other (Bond, 1991; Shu, 2001). People in many companies may consider information as a major personal asset, and thus may be less willing to make important information accessible across the whole company (Martinsons and Hempel, 1998; Martinsons and Westwood, 1997). Inefficient collaboration and communication between departments was thus expected as a potential ERP post-implementation barrier that may prevent efficient use and maintenance of ERP in Chinese firms.
Raveenda and Somu (2012) as per their consolidated statistics on ERP success, compiled over multiple surveys, 50 to 70 percent of the projects are reported as challenged in some respect, usually: the project is late, or it is over budget, or the system is implemented with less than hoped for functionality.

Guo Chao Peng, Miguel Baptista Nunes (2008), discussed the barriers to successful exploitation of ERP systems in China. The researchers identified and established a total of 25 ERP post-implementation barriers, namely 7 Cultural Barriers, 9 Organizational Barriers, and 9 System Barriers.

Under Cultural barriers they identified Power centralization and centralized decision-making due to high power distance, high context and implicit form of communication, Unwilling to disclose problems, faults and failures in order to ‘save face’, Chinese employees do not use their critical thinking skills, Less inclined to use systematic procedures and explicit information to tailor forecasts and plans, Trust personal common sense/intuition rather than system data to make decisions and Building inter-organizational relationships based on personal relationships. On the Organizational barriers they identified barriers such as Inefficient collaboration and communication between functional departments, Fear of loss of power and loss of job, Short-term behavior and lack of top management support, Lack of explicit IS development plan and insufficient ERP post-implementation funds, Lack of in-house IT specialists and Low-quality and ill-trained staff and low involvement of employees. On the System barriers there are barriers such as Insufficient support and services from system vendors, Inexperienced and low-qualified system consultants, System inflexibility and incompatibility, High cost for ERP add-ons and further enhancement and Deficient system design, slow system response time and poor data quality.

Li Fang and Sylvia Patrecia (2005), Studied the Critical success factors in ERP implementation. They stated 11 CSFs from three points of view: strategic, tactical, and cultural. The CSFs are: Top management support and ERP strategy, Business Process Reengineering, Project team & change management, Retain the experienced employee, Consultant and vendor support, Monitoring and evaluation of performance, Problems anticipation (troubleshooting, bugs, etc.), Organizational culture, Effective communication, and Cultural diversity.
By testing the perceived CSFs in six respondents (VSM Group, Scania, Sogeti, SYSteam, Oracle, and SAP), their report puts the 11 factors into three overall ranks (most critical, medium critical, and less critical), gains 3 other new critical factors (testing, business model, and client’s resources), and clarifies the diverse opinions about CSFs from customers/companies, consultants, and vendors. The most critical factors are Top management support, Business Process Reengineering, Project team & change management, and Effective communication. The medium critical factors go to ERP strategy, Consultant and vendor support, and Organizational culture. And the remaining 4 factors belong to less critical category. For the differences, their agreement comes into the 4 most critical factors. In monitoring and evaluation of performance they agree on its less criticality. All customers, consultants and vendors have quite different opinions about the remaining 6 factors.

Given those studies it’s obvious that most ERP implementation experience high failures rates due to high implementation cost of the project, system is implemented with less hope for functionality and lack of management support. However most of the above studies were conducted in foreign countries where there is high technological advancement and where ERP systems are highly used, but this study is conducted in Tanzania a developing country where ERP is new to most of its companies. Also limited studies are available concerning ERP implementation that has prompted the researcher to study this topic in Tanzania environment.

The results of the study is equal or less the same from other research conducted in developed countries, that makes the literature review to be of relevance in conducting this research concerning the assessment of ERP implementation in Tanzania companies.
Conceptual framework

Figure: 2.1 Conceptual Framework

Figure 2.1 illustrates the conceptual model developed for this study. This conceptual framework is an assembled set of research concepts cum variables together with their logical relationships. It seeks to describe research concepts cum variables as isolated but in a unified system of relationships.

Drawn from multiple literature bases, this is an integrated ERP implementation conceptual framework which is comprised of a set of theoretically important constructs. This framework has been developed based on the project life cycle approach, in which the ERP implementation project goes through different phases before it goes live. There are number of factors that affect the ERP implementation process are termed in this study as implementation critical success factors. Upon the completion of ERP implementation
project, performance is measured by a mix of project outcomes and the project and business outcomes (intended business performance improvement).
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction
Research Methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically (Kothari, 2008, p.8). It consists of type of the study, study area, study population, units of analysis, variables and their measurements, sample size and sampling techniques, types and sources of data, data collection methods, validity issues, and data analysis methods.

3.1 Research Design
The type of research strategy used for this study is case study, the reason for choosing a case study design was due to its flexibility to use interviews, observations, questionnaires and documentations. Also a case study was less expensive than other methods in terms of consumption and needed resources.

A research design is the framework of a study that specifies how each activity is conducted to accomplish the research objectives, which includes specifying the information required, designing the instruments, selecting the sample, collecting and analyzing the data (Robson, 2002). Research design can be classified into some basic types which include Exploratory, Descriptive and Experimental Design.

In this study, the researcher intends to make in-depth investigation to obtain valuable insight to the problem by concentrating on the selected case. Detailed information will be collected through variety of data collection instruments. A case study methodology will help to undertake some particular problem or situation in great depth, and identify cases rich in information. The motivation towards the choice of the methodology is that it will enable the researcher to gain holistic view of the problem studied and hence provide a round picture since many sources of evidence will be used.

3.2 Study Population
Population refers to the totality or the aggregate of all individuals with specified characteristics (Richard 2006).

The targeted population comprised of 48 individuals who are the users of ERP (SAP) systems. Since the study aimed at assessing the implementation of ERP, the target population of the study will be employees of SBL from different ERP (SAP) departments such as Logistics, Sales, Procurement, Accounting and Finance and shortlisted Suppliers.
3.3 Sample size and sampling technique
Sampling helps to select the respondent according to the purpose of the study. From our case, sometimes staff members were chosen from different levels for interviews.

3.3.1 Sample size
This refers to the number of items selected to represent the population studied. An optimum sample should be one which fulfills the requirements of efficiency, representativeness, reliability, and flexibility (Kothari, 2004). In this study, the selected sample size is from employees and stakeholders of SBL.

The sample size for this research is 48 peoples from an organization of study and their business associates. The Sample comprised 2 heads of the organization, 42 Staffs from different departments such as IT, Logistics, Sales, Procurement, Accounting and Finance and shortlisted Suppliers from an organization of study (SBL) that uses ERP and 2 staffs of DHL supply chain who are the warehouse and distribution suppliers of SBL. Also the sample comprised 2 staffs from different business being the customers of the organization and stakeholders.

3.4 Sampling technique
In this study the research employed the following procedures and technique to obtain appropriate respondents.

3.4.1 Purposive Sampling Technique
This method was selected by the Researcher for the purpose of selecting respondents’ rich of information necessary for the study in-depth analysis. Purposive sampling is particularly relevant when you are concerned with exploring the universe and understanding the audience. In this case the sample was selected considering the information required.

Sample elements respondents were chosen that can fill certain criteria, the study selected respondents for interview that are believed to yield the most comprehensive understanding of the study which included; Head of Logistics department, Procurement officers, IT staffs supporting SAP application, Accounting and Finance staffs, DHL staffs
who are the warehouse and distribution suppliers of SBL and thus they were selected for the purposive sampling technique.

3.4.2 Simple Random Sampling
The technique involved using of simple random sampling to select the sample respondents at random from the sampling frame without replacement. Each member element of the population had equal chance of being selected for sample. This technique was used to obtain respondents who were given questionnaire at IT, Logistics, Sales, Procurement, Accounting and Finance, and warehouse and distribution departments.

3.5 Data Collection Methods and Approach
Various sources were used to collect data for this study. Techniques that were used in data collection include Questionnaire, Interview, and Documentary review.

3.5.1 Primary Data
The primary data are those which are collected afresh and for the first time and thus happen to be original in character (Kothari, 2004). In this study, the primary data were collected through questionnaires prepared by the researcher and interviews were conducted by the researcher with the help of the SBL Management.

3.5.1.1 Questionnaire
In this study, the questionnaire is the main instrument for data collection. The reason behind the adoption of this method is that it is fast, cheap, and free from bias, gives respondents enough time to reflect on the questions and provides an efficient way for collecting responses from a large sample. The questionnaire is comprised with both open-ended and closed-ended questions. Open ended questions allow the respondent to answer freely to the subject in their own words rather than being limited to choosing from a set of alternatives.

A total number of 48 questionnaires were distributed with a response rate of 72.9% equal to 35 questionnaires returned. (See questionnaire on appendix I)
3.5.1.2 Interview
The interview method of data collection involved presentation of oral-verbal stimuli and reply in terms of oral-verbal responses. This method helped me to gather information in greater depth especially from managers and decision makers who are more likely to agree to be interviewed rather than complete questionnaires, where by 2 managers were interviewed.

This method enabled the researcher to generate information related to individual experience and perceptions regarding the use of ERP. Interview is important for collection of primary data.

3.5.2 Secondary Data
Secondary data are those that are already available, and refer to data that have already been collected and analyzed by someone else (Kothari, 2004). Secondary data were obtained through documentary review, which included reviewing both published and unpublished documents, reports, papers and dissertations.

3.5.2.1 Documentary Review
Various documents were used to collect information needed. In this regard, the relevant information from published and unpublished documents including textbooks, journals, company’s reports and publications related to SAP implementation, dissertations, online materials and different papers related to Enterprise resource planning (ERP) were used to collect data.

3.6 Data presentation and Data analysis methods

3.6.1 Data Management
Data cleaning was done prior to carrying out data analysis so as to ensure validity and reliability. Each questionnaire was inspected and corrected to ensure that the data contained therein are eligible and accurate. Thereafter coding was done by assigning numerical values.

3.7 Data Analysis
The term analysis refers to the computation of certain measures along with searching for patterns of relationship that exist among data-groups. Thus, “in the process of analysis,
relationships or differences supporting or conflicting with original or new hypothesis should be subjected to statistical tests of significance to determine with what validity data can be said to indicate any conclusions” (Kothari, 2004).

According to the aim and purpose of the research both methods of Qualitative and Quantitative were combined and used together in order to have in depth analysis and conclude the results by using some measurements. Therefore, tables, percentages, and graphs were necessary to examine and compare the collected data from questionnaires and interviews.
CHAPTER FOUR

PRESENTATION OF THE FINDINGS

4.0 Introductory Remarks
This chapter presents the findings of the study, analysis of the findings and discussion as per the study objectives. The information presented in this chapter relied heavily on questionnaire, interviews and various references regarding Implementation of ERP. Chapter three discussed the research design and methodology which also included appropriate data collection methods. The primary focus of this chapter is to present the findings and also to analyze the research data obtained. The analysis is based on the research data collected through various methods including questionnaire, documentary analysis and observations. Responses from several questions asked in the semi-structured questionnaire were discussed in detail.

4.1 Respondents Description
This section presents respondents characteristics from the study and the organization of study. The study took into considerations the respondents personal description and general information which regarded as useful in explaining the relationships between variables. This information include General information regarding the companies type of ERP implemented, Employees hours of ERP usage per day, Critical success factors of ERP implementation, steps used by SBL on implementation of ERP, and the respondents opinions on the barriers encountered during implementation of ERP.

4.1.1 ERP in the Organization of study (SBL)
SBL as a manufacturing company has first introduced the use of ERP at the mid of 2012 to control its operations and financial flow, the project was named as Project Chui reflecting their famous logo of Leopard on their number one brand Serengeti Lager. SBL selected and introduced SAP as their ERP system in September 2012, now ERP is running in SBL for the past 1 year. It took six months since the agreement/contract was closed to final letter of project ending was release in which the release was a go live of SAP.

SAP was founded in 1972 it is the recognized leader in providing collaborative business solutions for all types of industries and for every major market. Its headquarters is located
in Walldorf, Germany. SAP is the world's largest inter-enterprise software company and the world's third-largest independent software supplier overall. Today, SAP employs more than 32,000 people in more than 50 countries. The solution of my SAP ERP provides end-to-end functionality for business analytics, financials, human capital management, operations, and corporate services and allows clients to upgrade to the full of SAP solutions.

SBL implemented SAP to integrate its information from the entire enterprise, including process such as production, customer orders, inventory, purchasing, sales and distribution, finance, and supply chain. SAP is largely used at SBL on:

- Finance (financial accounting, treasury management, enterprise control and asset management) therefore SAP is used in improvement of Finance processes and ensure SAP SBM compliance in PTP (Purchase to Pay), OTC (Order to Cash), Manufacturing data Processing and RTR (Record to Report).
- Logistics (production planning, materials management, plant maintenance, quality management, project systems, sales and distribution).
- Sales, purchase and inventory (sales and distribution, inventory and purchase). Whereby the sales orders are processed on the SAP with respect to the ordered quantity that is available in the system and corresponds with the physical count/inventory on hand. Customers payments made through Cheque are also posted in the SAP system and the payment reflects to the sales person who can verify order against payment.
- Materials’ requirements planning, this is the dependent demand technique that uses a bill-of-material, inventory, expected receipts and a master production schedule to determine material requirements. Basically MRP were inventory control systems focusing on materials and planning control.
- Engineering data control (bill of material, process planning and work center data).
- Resource flow management (production scheduling, finance and human resources management)
- Shop floor control and management and others like costing, maintenance management, logistics management.

### 4.1.2 ERP Critical success Factors

The success or failure of ERP implementation is closely related to how the companies handle the process. The ERP implementation process could differ in every company. The
differences might concern to the implementation goals, the scope, or the available resources. But among all the differences in the every implementation process there are some general points that are important in the process and would strongly result in the success or failure in the implementation.

Those important points were identified as critical success factors (Laudon & Laudon, 1998). Critical success factors are defined as “those few critical areas where things must go right for the business to flourish” (Rockhart, 1979). Understanding the CSFs in ERP implementation would give some guidelines on what factors that should be given more attention in order to bring the implementation process into success. The CSFs could either be a risk or opportunities, depends on how the organizations handle them.

From multiple literature bases the CSFs of ERP implementation are likely to be equal or the same in all the companies implementing ERP or varies depending on the technological advancement and extent of the implementation or usage of ERP.

To fulfill the purpose of this study this chapter analyzes empirical findings. The analysis critically reviews the results and displays patterns corresponding or diverging from theories derived from the frame of reference. The rank of CSFs is interpreted, and the differences among them are discussed.

A list of all the critical success factors with the ranks was made based on the answers of the respondents and the reference available concerning ERP implementation. The results from the respondents were tabulated and analyzed on Table 4.1.
<table>
<thead>
<tr>
<th>Table 4.1: The rank results of CSFs from respondents</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Top management support</td>
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<td></td>
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<tr>
<td>Change management</td>
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<tr>
<td>ERP strategy</td>
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<tr>
<td>Process redesign</td>
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<tr>
<td>Project Management</td>
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<tr>
<td>Educational infrastructure</td>
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<tr>
<td>Project team work and composition</td>
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<tr>
<td>User satisfaction</td>
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<tr>
<td>User training</td>
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<tr>
<td>Risk management</td>
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<tr>
<td>User involvement</td>
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<tr>
<td>Consultants support</td>
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</table>
Table 4.1 shows what was collected from the field by using questionnaire and interview methods described on chapter 4, the respondents were asked to indicate the extent to which they agree or disagree to the critical success factors listed whereby they were supposed to choose either strongly disagree, Disagree, Neutral, Agree and Strongly agree. The scale was created to measure the weight of each Critical success factor, the scales are 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=strongly agree. The CSFs with their corresponding number of response on the bracket and the percentage of response are shown on the table 4.1; the total number of response and the rating count are also indicated.

Rating average is arrived as per the following logic:

Rating average=((R1*1)+(R2*2)+(R3*3)+(R4*4)+(R5*5))/(R1+R2+R3+R4+R5), where R1 is the count of respondents who had ranked the intensity of the CSF as 1 and R5 is the count of the respondents who had ranked the intensity of the same as 5. That is, 1 has lowest intensity and rank 5 has the higher intensity.
The results are presented in the form of a graph for better understanding & visibility. The graph related to the CSFs is presented on Figure 4.1.

**Figure 4.1. Ranking averages of the critical success factors of ERP**

<table>
<thead>
<tr>
<th>CSFs of ERP Rating average</th>
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<tbody>
<tr>
<td>Cultural Diversity</td>
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<tr>
<td>Organizational Culture</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Problems anticipation</td>
</tr>
<tr>
<td>Clear goal and objectives</td>
</tr>
<tr>
<td>Consultants support</td>
</tr>
<tr>
<td>User involvement</td>
</tr>
<tr>
<td>Risk management</td>
</tr>
<tr>
<td>User training</td>
</tr>
<tr>
<td>User satisfaction</td>
</tr>
<tr>
<td>Project team</td>
</tr>
<tr>
<td>Technological infrastructure</td>
</tr>
<tr>
<td>Project Management</td>
</tr>
<tr>
<td>Process redesign</td>
</tr>
<tr>
<td>ERP strategy</td>
</tr>
<tr>
<td>Change management</td>
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<tr>
<td>Top management support</td>
</tr>
</tbody>
</table>

Source: Field data (2013)

**4.1.2.1 The rank of critical success factors**

From the final score on Table 4.1, we can easily find the critical success factors and how important and critical is each of them. But the success factors will be grouped under three
categories which are the most critical factors, medium critical factors and less critical success factors depending on their rank and importance on the success of ERP.

The most Critical success factors of ERP are:-

These are the most critical success factors of ERP implementation, in this study the factors with rating average greater than 4 are treated as the most critical success factor. The factors include:

- Top Management support (Score-4.8)
  Most of the respondents agreed that top management support is very important. As per survey 29 (82.9%) of the respondents strongly agreed that top management is the most critical success factor of ERP implementation while 4 (11.4%) agreed and 2 (5.7%) were neutral, none of the respondents Disagreed or strongly disagreed.

This means that Top management support is consistently identified as the most important and crucial success factor in ERP system implementation projects. D.P. Slevin and J.K. Pinto (1996) defined top management to provide the necessary resources and authority or power for project success. Top management support in ERP implementation has two main facets: (1) providing leadership; and (2) providing the necessary resources. To implement ERP system successfully, management should monitor the implementation progress and provide clear direction of the project. They must be willing to allow for a mindset change by accepting that a lot of learning has to be done at all levels, including themselves.

On one of the interview with top management staff he added that a good commitment from top management is essential to support the implementation progress. The implementation plan must be communicated from top down to show the attention from the top management, he acknowledge that budget is very important as the support of the activities and in choosing the software.

Gibson, Holland and Light (1999) added that Management must be involved in every step of the ERP implementation and committed with its own involvement & willingness to allocate valuable resources to the implementation effort (Gibson, Holland & Light, 1999). In this way, the progress of the project can be monitored and directed. Top management needs to identify the project as a top priority publicly and explicitly, to set up the suitable
and competent project team, to share the role of new systems and structures through the whole organization.

- **Technological infrastructure (score-4.7)**

68.6% of the respondents strongly agreed that technological infrastructure is one of the success factors of ERP implementation. Developing countries usually face the problems of ERP implementation, Al-Mashari, M. (2002) and Yasser Jarrar, (2000) argued that adequate IT infrastructure, hardware and networking are crucial for an ERP system’s success. It is clear that ERP implementation involves a complex transition from legacy information systems and business processes to an integrated IT infra-structure and common business process throughout the organization. Hardware selection is driven by the firm’s choice of an ERP software package.

The ERP software vendor generally certifies which hardware (and hardware configurations) must be used to run the ERP system. This factor has been considered critical by the practitioners and as well as by the researchers.

- **Effective Communication (score-4.7)**

With highest score 4.7 rating average communication is taken as one of most challenging and difficult tasks in any ERP implementation project. It is considered a critical success factors for the implementation of ERP systems by many authors like Esteves, J. and Pastor, J (2001) on their article of Analysis of critical success factors relevance along SAP implementation phases”.

It is essential for creating an understanding, an approval of the implementation and sharing information between the project team and communicating to the whole organization the results and the goals in each implementation stage. In addition to gaining approval and user acceptance, the communication will allow the implementation to initiate the necessary final acceptance. The communication should start early in the ERP implementation project and can include overview of the system and the reason for implementing it be consistent and continuous.

SBL displayed banners and circulated emails to its employees regarding SAP implementation and the preparation which were made by the company for all employees to be aware and accept changes.
Process redesign (score-4.4)

With score of 4.4 rating average many respondents strongly think that business process reengineering/process redesign is very important and grounded process in ERP project. Companies need to identify their current business structure and business processes associated with their existing IT systems in the beginning of ERP project and relate this to the business processes contained within ERP. Business process reengineering is defined by M. Hammer and J. Champy (1993), as “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed”. Organizations should be willing to change their businesses to fit the ERP software in order to minimize the degree of customization needed. The implementation of ERP requires examination of many business processes, which believed to be one of the important and beneficial results of the implementation of ERP system.

Therefore the consulting work should start with Business process reengineering, then group project, implementation and Go live.

Clear Goal and objectives (score-4.3)

This critical factor scored 4.3 rating average with 54.3 % (19) respondents strongly agreed, 31.4% (11) agreed, 8.6 % (3) neutral, 2.9% (1) disagreed and 2.9 % (1) strongly disagree. The score shows that more than half of the total respondents agreed that clear goal and objectives are the critical success factor in the implementation of SAP in their organization.

Clear goals and objectives are essential to guide an ongoing organizational effort for ERP implementation as it usually exceeds the time frame for a typical business project. Clear goals and objectives were among the ten most critical success factors in a study of MRP implementation. It is important to set the goals of the project before even seeking top management support, D.P. Slevin and J.K. Pinto (1996). The “triple constraint” of project management specifies three often competing and interrelated goals that need to be met: scope, time, and cost goals. There must also be clear definitions of goals, expectations, and deliverables. Finally, the organization must carefully define why the ERP system is being implemented and what critical business needs the system will address.
- **Project Management (score-4.3)**

54.3% strongly agreed and gave project management a score of 4.3 rating average. Project Management involves the use of skills and knowledge in coordinating the scheduling and monitoring of defined activities to ensure that the stated objectives of implementation projects are achieved. The formal project implementation plan defines project activities, commits personnel to those activities, and promotes organizational support by organizing the implementation process.

- **Change management (score-4.2)**

With rating average of 4.2 the study revealed that 29 (65.7%) respondents strongly agreed. The agreeing rate shows that the respondents approved change management to be one of the top priorities in the successful implementation of ERP. Project team supplies the ERP project with good team composition and sufficient team skills. And change management creates new working relationships and information sharing among departments, assumes additional responsibilities, and increases the user involvement based on the requirements of ERP implementation.

Change management is a primary concern of many organizations involved in ERP project implementation. Many ERP implementations fail to achieve expected benefits, possibly because companies underestimate the efforts involved in change management.

Esteves, J. and Pastor, J (2001) identify organizational change is the body of knowledge that is used to ensure that a complex change, like that associated with a new big information system, gets the right results, in the right timeframe, at the right costs.

Generally, one of the main obstacles facing ERP implementation is resistance to change.

Gupta (2000), points out that the resistance to change is one of the main hurdles faced by most companies. Resistance can be destructive since it can create conflicts between actors, it can be very time consuming. To implement an ERP systems successfully, the way organizations do business will need to change and ways people do their jobs will need to change as well.

There should be a recurring improvisational change as a useful technique for identifying, managing, and tracking changes in implementing an ERP system. Change Management is important and one of the critical success factors identified in the literature. It is
imperative for success of implementation project starting at the initial phase and continuing throughout the entire life cycle.

- **Project team work and composition (Score-4.2)**

Project team work and composition is another most critical success factor of ERP implementation, ERP team work and composition is important throughout the ERP implementation project. An ERP project involves all of the functional departments and demands the effort and cooperation of technical and business experts as well as end-users. According to a survey conducted by Kumar, K and Hillegersberg, J (2000), ERP implementation team comprises of, functional personnel and management, IT personnel and management, top management, IT consultants, ERP vendor, parent company employees, management consultants, hardware vendor.

The ERP team should be balanced, or cross functional and comprise a mix of external consultants and internal staff so the internal staff can develop the necessary technical skills for design and ERP implementation. According to Jeff Stratman and Roth (2002) survey, having competent members in the project team is the fifth most important success factor for IS implementation.

Some of the respondents added there must be top owners for the whole function of the company”. This is perhaps because of the negative aspect that the operational level staff cannot take important decision, which is shared by both of them, therefore it is necessary to have guidelines on how and what to decide. Further, the members of the project team(s) must be empowered to make quick decisions.

- **User Training (score-4.1)**

User training have the score of 4.1 rating average, the score shows that user training is a very important success factor of ERP implementation. In ERP implementation process many projects fail in the end due to lack of proper training.

C.C. Sum et al. (1997) explained Education and training refers to the process of providing management and employees with the logic and overall concepts of ERP system thus, people can have a better understanding of how their jobs are related to other functional areas within the company. The user is the people who produce results and should be held accountable for making the system perform to expectations.
Many researchers such as Esteves, J. and Pastor, J (2001) consider users training and education to be an important factor of the successful ERP implementation.

The main reason for education and training program for ERP implementation is to make the user comfortable with the system and increase the expertise and knowledge level of the people within the company.

Three aspects concerning the contents of training are:
(1) Logic and concepts of ERP
(2) Features of the ERP system software
(3) Hands-on training

Concept training shows the people why the ERP system is implemented and why changes to the ERP system are necessary, while functional training (hands-on training) helps overcome the fear for computer systems since managerial people would fear that they are computer illiterate and they would lose power if manpower is reduced due to computerization, and the education can help overcome such fear. Training is not only using the new system, but also in new processes and in understanding the integration within the system – how the work of one employee influences the work of others. Therefore Education and training has a positive impact on ERP implementation success.

Before the go live, SBL prepared training programs of SAP to enable smooth implementation and usage of SAP, the trained employees are now able to use SAP application.

**User Involvement (score-4.0)**

On the user involvement the score is 4.0 rating average with 48.6% (17) respondents strongly agreed, 28.6% (10) agreed, 5.7 %( 2) neutral, 11.4 %( 4) disagree and 5.7 %( 2) strongly disagree. The results make user involvement to be one of the most critical success factors.

User involvement refers to participation in the system development and implementation processes by representatives of the target user groups. System implementation represents a threat to users’ perceptions of control over their work and a period of transition during which users must cope with differences between old and new work systems. User involvement is effective because it restores or enhances perceived control through participating in the whole project plan.
There are two areas for user involvement when the company decides to implement an ERP system: (1) user involvement in the stage of definition of the company’s ERP system needs, and (2) user participation the implementation of ERP systems. The functions of the ERP system rely on the user to use the system after going live, but the user is also a significant factor in the implementation.

Often companies do not recognize the impact of choosing the right internal employees with the right skill set. Internal resources of a company should not only be experts in the company’s processes but also be aware of the knowledge of information systems application in the industry. Involving users in the stage of defining organizational information system needs can decrease their resistance to the potential ERP systems, since by which users have feelings that they are the people who choose and make the decision. Therefore user involvement was one of the success factors to the implementation of SAP at SBL where by its employees participated in the implementation process and accepted the changes introduced.

**Medium Critical Factors:-**

These are the medium critical success factors of ERP implementation, in this study the factors with rating average greater than 3 but less than 4 are treated as the medium critical success factor. The factors include:

- **ERP strategy (score-3.0)**

The respondents gave ERP strategy a score of 3.0 rating average making it to become the medium critical success factor. But it is essential that the impetus for an ERP comes from the company’s strategic plan, and that the plan for the current time frame has the ERP project as one of the company’s top strategic initiatives.

To implement ERP packages needs a good plan of what kind of package to choose (customized or non-customized) and implementation time, rather than just to purchase off-the-shelf software. To make software and business process perfect with each other, a further technical choice is whether to carry out custom development on the package software and the amount of custom development. That is why “Pre-study is important because the choice of the software would be based on that. A good start is important for a good next step.”
• **User satisfaction (score-3.1)**

This is probably the most distinctive outcome of the present study. It corroborates the importance of this variable as a mediator to achieve ERP business improvement success.

As Holsapple et al. (2005) assert it is crucial that management, during the ERP implementation process, “pay more attention to user issues”. “A system that does not provide User Satisfaction is less likely to be used in producing beneficial results to the organization” (Guimaraes et al., 1995).

So, management at Tanzanian companies should be aware of the importance of ERP User Satisfaction as an essential CSF towards ERP business improvement success, and make every possible effort to manage and leverage this determining element.

• **Risk management (score-3.4)**

Every Information technology implementation project carries important elements of risk; hence it is probable that progress will deviate from the plan at some point in the project life cycle. ERP implementation project risks are described as uncertainties, liabilities or vulnerabilities that may cause the project to deviate from the defined plan. Risk management is the competence to handle unexpected crises and deviation from the plan. The implementation of ERP system project is characterized as complex activity and involves a possibility of occurrence of unexpected events. Therefore, risk management is to minimize the impact of unplanned incidents in the project by identifying and addressing potential risks before significant consequences occur. It is understood that the risk of project failure is substantially reduced if the appropriate risk management strategy is followed.

• **Consultants support(score-3.2)**

Due to the complexity of implementing an ERP system, it requires the use of either internal or external experts who are knowledgeable about the installation and software. Many companies prefer or must have external consultants to perform ERP implementation. Somers & Nelson (2003) revealed in their research on ERP implementation that consultants may be involved in different stages of the ERP project implementation. Clearly, it is critical success factor and has to be managed and monitored very carefully.
With the score of 3.2 respondents think that consultant support is one of the important critical factors. Respondents argued that competent consultant and vendor support can help clients to remove knowledge barrier between various levels of management within a company while implementing new ERP package. The assigned consultants must be the one with enough skills and competency.

Consultants can help in information system requirement analysis by assisting companies in making blueprint of their business process from the bottom level until the top management, consultants also can recommend which hardware and software that is most suitable, and assist companies in implementation management. Therefore, to make sure that the companies are assisted with an experienced and competent consultant is very important.

- **Organization Culture (score-3.4)**

   Organization should have a strong corporate identity that is open to change (Kuang et al., 2001). Being a strategic solution, ERP systems will change the way people used to work, rather than operational levels, such as using a new computer program. The innovative open organizational culture will facilitate the user participation throughout the whole implementation process.

**Less Critical factors**

These are the less critical success factors of ERP implementation, in this study the factors with rating average greater than less than 3 are treated as the less critical success factor. The factors include:

- **Problems anticipation(score-1.8)**

   With the score of 1.8 rating average problems anticipation becomes the least important critical factor for the success of ERP, 54.4% (18) respondents strongly disagreed that problems anticipation is not the most important CSF compared to other factors and only 5.7 % (2) out of 35 respondents.

   Quick response, patience, perseverance, problem solving and firefighting capabilities are important to manage any troubleshooting and ease implementation.
Cultural diversity (score-2.3)
The gaps between the functionality offered by the package and the functionality required by the adopting organization need to be bridged in the new software implementation.

4.1.3 Approach on Implementation of ERP
The vendor developed an accelerated implementation methodology for SAP application at SBL to provide a clear, proven framework to manage the project and customer expectations and provide guidelines for communication and documentation. Every organization implementing this ERP manages an implementation process that encompasses five critical steps. SBL also followed the same stages of implementation to arrive to the go live stage.

4.1.3.1 Phases of ERP Implementation
The implementation methodology divides the implementation projects into phases. It starts when the customer signs the contract the time when the sales organization hands the project over to the consulting and implementation organization. It goes on to cover the entire implementation process and the concluding review and optimization conference, which takes place several weeks after the project is handed over to the customer. The five phase of the methodology are described below.

Phase 1: Project Preparation
The purpose of this phase was to provide initial planning and preparation for the ERP Implementation. Although each ERP implementation has its own unique objectives, scope, and priorities, the steps in the project preparation phase help identify and plan the primary focus areas that need to be considered. This includes technical issues as well as project management topics. With the kickoff meeting, the implementation team communicates the project plan along with the expected commitment the organization will have to make in terms of time and resources. Roles and responsibilities of the various participants in the project are identified. In addition, the ERP software is delivered and the preliminary installation of a test system is completed.

Major Milestones:
The major milestones of the project preparation phase are:

- Project handover to implementation
- Customer kickoff meeting
• Delivery and installation of test system for the ERP software
• Project phase review and sign-off from customer

Phase 2: Business Blueprint
This crucial phase examines how the client would like to run the ERP to support his business. One or more workshops for gathering the requirements are conducted during which business processes and individual functional requirements of the organization are identified and analyzed. The workshops provide the opportunity to fine-tune the original project goals and objectives as well as to revise the overall project schedule, if necessary.

The result is the business blueprint, which documents in detail the results gathered during the requirements workshops. The business blueprint serves as a technical and functional guide during the subsequent phases of the implementation project.

Major Milestones:
The major milestones of the business blueprint phase are:
• Workshops to gather business requirements with the customer’s functional leads
• Creation of the detailed business blueprint document
• Determination of changes to initial project scope and time schedule (if applicable)
• Project phase review and sign-off from customer

Phase 3: Project Realization
The goal of project realization is to implement all the business process and technical requirements gathered during the previous phases and documented in the business blueprint. The consultants validate and update the configuration and demonstrate processes while the project team updates the work instructions (business process procedures, for example) and performs unit and integration tests. Major Milestones:
The major milestones of the project realization phase are:
• Software installation and customization based on the business blueprint
• Data migration (if applicable)
• Validation of system setup
• System testing
• Definition of training and cutover plan
• Project phase review and sign-off from customer
Phase 4: Final Preparation
This phase focuses on preparing both ERP and the customer for going live. Key activities during this phase include completing user and administrator training as well as final fine-tuning of ERP. As part of final system tests, necessary adjustments are made to resolve all remaining critical open issues.

**Major Milestones:**
The major milestones of the final preparation phase are:
- Key-user and administrator training
- System readiness for going live
- Completion of cutover activities
- Project phase review and sign-off from customer

Phase 5: Going Live and Support
Completing this phase is the ultimate goal and the most exciting step of the implementation project. This is when the organization goes live with the ERP software and starts managing all daily activities independently. The going-live and support phase consists of two distinct subphases. First, the project is completed with a formal project closing. During this time, the software is used productively in day-to-day operations, all issues and problems are resolved, transition to the production support team is finalized, knowledge transfer is completed, and the project is signed off.

Subsequently, the continuous improvement subphase begins during which the production support team monitors the software and resolves live business process issues. Proper change management procedures are established and ongoing end-user training is conducted. Plans are made to continuously review and improve business processes.

**Major Milestones:**
The major milestones of the going-live and support phase are:
- Full production implementation of ERP
- Project phase review and sign-off from customer for going live and support as well as for final project completion
4.1.4 Barriers to the successful implementation of ERP

One of the research objectives was to find the barriers encountered during the whole process of implementation, therefore this part of the findings will give out the barriers to the successful implementation.

The barriers were collected through questionnaire where by each respondent was required to fill the barrier/challenges faced by him/her in using ERP, also the general barriers related to the project implementation itself were investigated.

The barriers/challenges encountered during ERP implementation were categorized as ERP product/Application related, People (stake holders) related, Project cost overrun related, Project schedule overrun related, Implementation partner (agency) related, Technical issues related and General ones (Strategic in nature like Change Management, Project Management, training and involvement of the management). Below are the categories and the barriers under them regarding the successful implementation of ERP (SAP).

a) ERP product related

Product related barriers might delay the implementation and increase the cost of the project, the barriers are such as:-

- Increasing time of processing a single order which starts from payment received, posting payment into SAP, confirmation of payment, posting of customer order and printing the documents required for picking the ordered goods (documents such as picking order, invoice and copies of dispatch notes)

- Software is not user friendly, where by many users complain the software requires special training on its usage and user attention and concentration is required all the time he is using SAP system.

- Lack of understanding of the product capabilities

- Gaps between product features and the expectations

b) People related
These are the barriers related to the people that uses ERP. People related barriers could be the cause for the cost related, schedule related and some of general the general barriers. The barriers that the respondents outlined are such as:

- Employees resistance to change
- Lack of involvement during the project implementation
- Unavailability of skilled people that were previously using ERP products
- Turnover (resignation) of the key people involved in the project implementation

c) Project cost overrun related

High cost of implementing ERP, the cost of installing one desktop computer was estimated to be around 10 million Tanzania shillings. Otherwise user should work remotely by login a certain program (Citrix) in order to access the SAP system server.

- Rise in the consulting fee due to project delay
- Implementation delay
- Scope creep which refers to uncontrollable changes or added objectives in a project scope.
- Unplanned/ extended training
- Additional investment on technical infrastructure.

d) Project schedule overrun related

Schedule related barriers have the resultant impact on cost, definitely and vice versa, as well. The barriers are such as:

- Poor schedule estimation (unrealistic or over-ambitious)
- Technical issues (both hardware and software)
- Data related issues
- Resource conflicts (staff, budget etc.) Team-poor involvement/ resistance
- Implementation partner (consultant related issues)

e) Implementation partner related

Implementation partner related barriers have impact on almost all other barriers. That is, poor partner, due to poor guidance, result for delayed execution, cost escalations, product not getting configured as per expectations, technical bottlenecks etc.
Under implementation partner related we have:

- Poor knowledge transfer
- Poor alignment with the internal team
- Frequent change of resources

f) Technical issues
Technical barriers, generally, result for delayed implementation and block in enjoying the expected benefits due to performance issues etc. The barriers found under technical issues are such as:

- Data issues (delay in codification, providing data)
- The entry error correction approval and correction itself takes long time
- Inadequate hardware resources
- Performance (poor or slow), this is due to the poor network connection
- Business entities are not well connected or networked
- Poor technical support for the users not located near the plant and technical support team.

g) General barriers
These are the barriers which are very detrimental to the overall well being of the project. The barriers as mentioned by the respondents are such as;

- More involvement of IT team instead of functional team
- Inadequate overall training
- Expectations out of ERP was not clear

4.1.5 Limitations of the study
This study is subject to several limitations. These limitations suggest caution in generalizing the study’s findings.
First, there was selection bias because data was obtained from only one user of ERP systems and only one type of ERP (SAP). Nevertheless, it is worth mentioning that authors like Nicolaou (2004) consider that in this kind of research, results are stronger when the ERP system vendor is controlled. In any case, a prominent avenue for future research is to include several ERP users and establish comparisons among them.
Second, a wider spectrum of CSFs was not included due to practical constrains such as cost and time. A similar analysis of other factors certainly provides another valuable opportunity for research.

Third, ERP User Satisfaction was a critical pillar identified in this study. But, because satisfaction is a state, it may change over time as will user perceptions while experience with the ERP will shape user reactions. Longitudinal evidence on ERP implementation stages may enhance our understanding of the relationships between variables that are important to ERP User Satisfaction.

The other fourth major constraint under this study is time, time provided for the preparation of the report writing is very minimal for making thorough literature review, and the time meant for field data collection is very limited. However, the prepared time schedule and work plan helped to make sure the resources required are readily available and each task is accomplished within schedule so as to cope with time indicated for submission of this dissertation and reduced variables to deal with in accordance with timeframe. In parallel with time limit, financial constraint also was a limit to the study as it was very difficult to get the required fund within the short period of time. To make sure that the fund was readily available for each task, budget was estimated in accordance to the fund available.

Data collection is the fifth constraint, whereby on data collection researcher was limited by the size of the sample as few companies in Tanzania have implemented ERP and even the ones that implemented ERP will not want to talk about the significant failures to their peers in terms of protecting corporate reputation.

Another limitation related to data collection was missing data in the responses. Items related to the ERP implementation project have relatively low response rates since some respondents who were not involved in the implementation project may not be familiar with the relevant facts, especially for items about the progress of the project.
CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

The previous chapter presented the findings of the study on the assessment of ERP implementation in Tanzania companies. This discussion has attempted to revise the most important findings based on the specific objective of the study. Researcher conducted a detailed survey to find out the CSFs of ERP implementation, the barriers encountered during implementation and the best approach in implementation of ERP to avoid failures. This chapter of the dissertation gives out the discussion and summary of the whole study, conclusion and the recommendations of the researcher concerning the study findings, main issues and objectives raised in study.

5.1 Summary

The study exploited the CSFs of ERP implementation. The study aimed at assessing the ERP implementation in Tanzania organizations but mainly focusing on finding the critical success factors of ERP implementation, the barriers encountered during ERP implementation in an organization and the best approach in implementation of ERP to avoid failures.

The critical success factors from previous researches and multiple literature bases were identified and listed down, since the success factors are likely to be equal or the same in all the companies implementing ERP then the success factors were ranked basing on the answers of the respondents, see table 4.1.

The rating average was used to rank each critical success factor, then each factor was interpreted and the differences among them were discussed to fulfill the purpose of the study. From the final score the factors were grouped under three overall ranks of most, medium and less critical success factors depending on their rating average (Importance on the success of ERP), and basing on the respondents answers. In this study the most critical factors found to be more important during the implementation are Top management support, Technological infrastructure, Effective communication, Process
redesign/Reengineering, Clear goals and objectives, Project management, Change management, Project team work and composition, User training and user involvement.

The medium critical success factors are such as ERP strategy, User satisfaction, Risk management, Consultants support and Organization culture. While the less important critical success factors found on this study are such as Problems anticipation and Cultural diversity.

The study also managed to find out the implementation approach used by SBL in implementing SAP system, the implementation of SAP passed through different phases before arriving to the go live stage. The phases as explained on chapter four of this study are such as Phase 1: Project preparation, Phase 2: Business blueprint, Phase 3: Project realization, Phase 4: Final preparation and Phase 5: Going Live and Support.

Also the barriers to the successful implementation were identified from the respondents opinions, the barriers were categorized under ERP product/Application related, People (stake holders) related, Project cost overrun related, Project schedule overrun related, Implementation partner (agency) related, Technical issues related and General ones (Strategic in nature like Change Management, Project Management, training and involvement of the management.

Therefore by reviewing the research questions, this report fulfilled the main objective and purpose of the study. With better understanding of the comprehensive identification of CSFs and criticality rank of each factor give out the barriers to the successful implementation and best approach of implementation management will be able to judge and allocate essential resources that are required to bring ERP implementation into success.
5.2 Conclusion

ERP systems link together an organization’s strategy, structure, and business processes with the IT system. ERP have become an essential infrastructure for many of the world’s leading companies. The systems provide an increased level of integration to support core business processes. The provision of real time data facilities improved decision making. The improved integration and standardization have made the systems attractive to companies to attract their global operations.

For every company whatever the reason they come to decision in implementing ERP, they need to comprehend ERP as a broad and complex system, involving a lot of resources, efforts, and cost. It would need to assimilate ERP in the enterprise. After reviewing the literature articles and analyzing empirical case studies, we can reveal the list of critical success factors and the rank of their criticality.

By looking at the total CSFs for ERP implementation, it can be concluded that CSFs of ERP implementation are quite well studied. It is also shown that all these CSFs were interrelated and changes in one CSFs influence all the others, directly or indirectly. Though all the factors had an important role to play in successful ERP rollouts the degree of focus in the literature varies. For instance top management support gained eminence over say, integration of different functionalities.

However the implementation and use of ERP systems face a number of issues due to their complexity and the impact they have on companies. These complex issues are such as barriers available in implementing the systems. Therefore companies have to be prepared to overcome those barriers by considering the critical success factors and follow the proposed stages of ERP systems implementation.

Very little research has been undertaken which assess the implementation of ERP systems especially in Tanzania. This study has collated industry presentations to identify possible issues in this region related to ERP systems. The issues have been identified as critical success factors, barriers of ERP implementation and the best procedure to follow during implementation.

This research is far from comprehensive however it provides a starting point in an area of research where there is a limited literature reviews concerning ERP implementation.
particularly in the Tanzania context. It provides future researches with a foundation to expand on.
5.3 Recommendations

The conclusions already answered the research questions, except that the researcher can draw some other recommendations from the empirical case studies that he think are useful for the ERP implementation.

The research suggest recommendations for the ERP success showing how to approach ERP implementation to avoid failure and what we should do considering the significance of each factor to a given dependent variable based on the findings of the study.

These recommendations can provide helpful information to many companies when they consider implementing or upgrading their ERP systems. This information should help companies reduce tremendous ERP implementation risks so that companies can have more chances to improve their business value with the success of EPR systems. Such practical implications can be applied to many companies for a better understanding about the factors that can lead to the success of ERP systems. This approach should be valuable information for decision makers of companies before or during their ERP implementation. Below are the recommendations of the researcher.

First, the study main focus was to find the critical success factors of ERP implementation and found that these success factors are helpful to the companies in arriving at the go live stage of ERP implementation. The success factors such as Top management support becomes the top factor that the company should consider when starts to implement ERP. Top management should provide the necessary resources and authority or power for project success.

The other critical success factors which are the most important and should be highly considered during implementation are such as technological infrastructure of the company, Effective communication between the employees and the ERP implementation team, Process redesign, Clear Goal and objectives, Project management, Change management, Project team work and composition, user training and user involvement.

The above are the most critical success factors proposed by this study if the company wants to achieve the successful ERP implementation. But the study also tested and proposed other critical factors categorized as medium importance factors in implementation such as ERP strategy, organization culture, user satisfaction, Risk
management and consultants support. Lastly the study proposed the factors which if available or not available the Implementation could have been successful, these factors are such as Problems anticipation and Cultural diversity.

Second, from the respondent’s opinions the study found the barriers that might hinder the smooth ERP implementation process, the company implementing ERP should be prepared on how to overcome these barriers or avoid them before and during the phases of implementation. It is found that the projects are reported as challenged in some respect, usually: the project is late, or it is over budget, or the system is implemented with less than hoped for functionality. In the same time, it is rather foolish/un-wise, to shy away in facing the ERP projects by showcasing the negative aspects of ERP projects. Instead, the war has to be faced with suitable preparations. Therefore, and in order to ensure long-term ERP success, there may be a need to raise awareness on the complexity and networked nature of organizational barriers.

Third, the customers/companies should increase their independence in the ERP implementation. Companies mostly depends on consultants’ suggestions especially when the consultants had sufficient experience in that particular business it is good for the consultants on one side, but if the customers depend too much on the consultants, it is not good because the companies know best about their own business. And to boldly follow consultants’ suggestion will not always be good for the customers. Companies should not completely rely on consultants, as consultants also have limited specific knowledge of the companies’ operation.

It is essential to get support from consultants and vendors because of the characteristic of ERP package. However, there is a lot of work that the customers should do by themselves in the real implementation process. The key actors in the implementation is the customers/companies themselves.

Fourth, it is not the software but the way of handling that leads to the success or failure of ERP implementation. The software used is not very important because basically most of them (Oracle, SAP, JD Edwards, SSA global) had similar capabilities, although some vendors were well known for certain specific industries or functions (such as the financial applications in Oracle). The important issue is how the implementation was conducted, which would lead to the usefulness of the software. If there is no problem when they are
going live, and all the users understand how to use the system, then whatever the software is chosen it will support the business activities.

Fifth, ERP implementation concerns more work of dealing with people than only performing technical tasks. Sometimes, human factors are more important than technical problems, the degree to make people aligned with new information system distinguishes the performance of ERP implementation. For the four most critical factors, there lies a lot of people work in top management support, Business process redesign, change management, and effective communication in order to secure the success of ERP implementation.
REFERENCES


Maldonado, M. (2009)“Factors impacting the Success of ERP Implementations in Small and Medium Enterprises (SMEs) operating in developing region” (2009).
Peter Gross, ‘How to implement ERP correctly?’Pemeco Inc., USA.
Tanzania Medical Stores Department (MSD), ERP Bulletin, April 2012.
The Tanzania Five Years Development Plan, president’s office planning commission (2011).

APPENDIX

1) Name of your Company:
2) Country and Region:
3) Contacts:

**PART I**

I want to know some general information about your organization. Please respond to the following questions:

4) Your company operates in which industry? (Please select ONE, the most relevant):
   a) Telecommunication
   b) Manufacturing
   c) Retail
   d) Services
   e) Distribution
5) In which year was your company established? _______

6) Number of Employees at your company: ____________
7) What is the name of the External Consultant Firm that supported your company during the ERP Implementation? _______________________

8) How long did it take (in months) the ERP implementation in your company, since the agreement/contract was closed to final letter of Project Ending was released?
    _______

9) How long has the ERP been running in your company’s processes? _______

10) Please let me know your current title in the organization _______

11) Your position in your company (Tick appropriate)
    a) Managerial
    b) Non-Managerial
c) Other Specify

12) What do you think are the critical success factors in ERP implementation?

13) Why do you think they are critical?

14) Please mention any problems/challenges faced by you in using the ERP systems.
   i.
   ii.
   iii.
   iv.
   v.
   vi.
**PART II**

According to my research from reference books and journals, I have identified some critical success factors in ERP implementation. Considering the ERP Implementation experience in your company, please indicate the extent to which you agree with below critical success factors by marking “X” against the appropriate scale shown. What do you think of these factors (listed below)? Do you agree or not? Why?

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<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
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<tr>
<td>Top management support</td>
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<td>Change management</td>
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<td>ERP strategy</td>
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<td>Process redesign</td>
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<td>Project Management</td>
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<td>Technological infrastructure</td>
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<td>Project Team</td>
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<td>User satisfaction</td>
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<td>User training</td>
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<td>Consultants support</td>
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<td>Clear goal and objectives</td>
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<td>Problems anticipation (e.g. Troubleshooting, bugs etc.)</td>
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<td>Communication</td>
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<td>Cultural Diversity</td>
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**PART III ** (Optional)

Your experience about ERP Implementation processes is very important to me. If you want to share any other comment or concern, please feel free to use this section.

15) Additional Remarks

Thank you very much for your collaboration.