ቅድስት ማርያም ዩኒቨርስቲ

St. Mary's University, Ethiopia

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

ASSESSMENT OF THE BENEFITS AND CHALLENGES OF ENTERPRISE RESOURCE PLANNING (ERP) IMPLEMENTATION IN ETHIO TELECOM

BY
SEBLE HAILU

JUNE 2021

ADDIS ABABA, ETHIOPIA

ASSESSMENT OF THE PRACTICES AND CHALLENGES OF ENTERPRISE RESOURCE PLANNING (ERP) IMPLEMENTATION IN ETHIO TELECOM

BY

SEBLE HAILU

ID: SGS/0257/2012A

A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PROJECT MANAGEMENT

JUNE, 2021

ADDIS ABABA, ETHIOPIA

ST. MARY'S UNIVERISITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF PROJECT MANAGEMENT

A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OFPROJECT MANAGEMENT

BY

SEBLE HAILU

Approved by Board of Examiners:

_____	_____
Dean, Graduate Studies	**Signature**
_____	_____
Advisor	**Signature**
_____	_____
Internal Examiner	**Signature**
_____	_____
External Examiner	**Signature**

DECLARATION

I Seble Hailu, Registration/ID Number SGS/0257/2012A, do hereby declare that this Thesis titled "Assessment of the practices and Challenges of Enterprise Resources Planning (ERP) implementation in ethio telecom" is my original work and that all sources of materials used for this thesis have been duly acknowledged. This work has not been submitted partially, or in full, by any other person for an award of a degree in any other university or institution.

Seble Hailu

_____ _____

Name Signature

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

_____ _____

Advisor Signature

Table of Contents

Acknowledgments

Praise Allah, the almighty for successful completion of my research. I am particularly profoundly grateful to my advisor Tiruneh Legesse (Ass. Professor), for his useful and constructive comments, without which this work would have not been completed successfully. This study was also made possible by the assistance obtained from the respondents who have demonstrated their willingness to complete the questionnaires, interviews and provide me with the required information valuable for the completion of the study. I cannot discount the encouragement and moral support given to me by my members of my family and friends, whom I profoundly admire and look up to. Last but not least, with love and sincerity, I express my gratitude to all those who dedicatedly have ensured the completion of this work.

List of Acronyms

ERP	Enterprise Resource Planning
HR	Human Resource
HRM	Human Resource Management
MRP	Material Requirement Planning
MRP II	Manufacturing Resource Planning
ICT	Information Communication Technology
ICP	Inventory control package
IT	Information technology
IS	Information System
SCM	Supply Chain Management
SPSS	Statistical Package for Social Science

List of Tables

List of Figures

Abstract

An Enterprise Resource Planning system is a corporate wide information system which is used to integrate the business processes and resources of a company. When the business processes of a company increases and becomes complex, it is difficult to continue with the traditional decentralized information systems for timely decision making and other activities. Therefore, the main purpose of this research is to examine the benefits and challenges of implementing ERP in ethio telecom and to recommend possible solutions for the gap created during the implementation. The data was collected using questionnaire and semi-structured interview from a target population. From the total of 621 target population, this research selected 243 samples and used stratified random sampling method to get the perspective of the system users. The researcher has used descriptive research method. The collected data was analyzed using mainly by computer such as SPSS version 25 and the findings were presented using tables. Then the data presented using descriptive statistics with the help of frequency and percentage to provide information. Mean and Standard deviation through measure of central tendency were also used to analyze data. The data that were collected by semi-structured interview questions and open-ended questions, interpreted manually. The result shows that the main benefits of implementing ERP includes; centralized control of operation, better resource management, decreased financial close cycle, improved decision making, quickened information response time, better Planning and quick information flow. On the other hand, the main challenges are difficulties in changing to new from old systems, network problem, inadequate training, and inadequate ongoing support, high costs of implementation and lack of top management commitment. From this fact the researcher recommend that the top management is expected to provide in the area of committing to the ERP system. In addition, the company should re-consider its system utilization since there are important features not yet utilized by the company, consider the way to give adequate training and development for both end user as well as super user to bring the required level of skill on the system. The finding is also identified the above discussed challenges and benefits for the company and suggests solutions to prepare proactively to minimize the effects of the challenges and to enjoy the benefits.

Key Words: Benefits, Challenges, Enterprise Resource Planning and ethio telecom

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

In contemporary business environment, Information Technology (IT) has become an important part of any one's daily activity. IT and Information Systems (IS) changed the business atmosphere. Production and services grew, quality is improved, and at the same time competition between companies is increased. In this competitive situation, organizations can survive only if they improve quality and minimize costs in their whole day to day business activities through diversifying their products and services, and provide more reliable delivery service in better ways in comparison to their competitors. Enterprise Resource Planning (ERP) systems have the ability to automate and integrate business processes, share data and practices, and produce access real-time information across the organization as well as the end users (Janice Yick, 2011).

Since the early 1990s, the reliance and dependence on ERP systems have been growing substantially, and the purchase and implementation of ERP systems continues to be one of the fastest growing segments of the IT sector. Where it is a best tool to business solutions that support integration of internal business process within the enterprise, connecting a number of modules to one centralized database, modules like: sales; human resources; finance; logistics; manufacturing; order fulfillment; and supplier management (Lou & Strong, 2004).

ERP system allows companies to integrate different departmental information and further it attempts to integrate the suppliers and customers with the manufacturing environment of the organization as well. Traditionally, organizations were generally employ application systems which treat each transaction separately and they were built around the strong boundaries of specific functions that a specific application is meant to cater for. ERP stops treating these transactions separately as standalone activities and considers them to be a part of interlinked processes that make up the business. Beyond its pure software package, ERP embodies established ways of doing business. Studies have illustrated that an ERP system is not just pure software package to be tailored to an organization but an organizational infrastructure

that affects how people work and that it "imposes its own logic on a company's strategy, organization, and culture" Davenport (1998). Hence, the researcher examined the effect of such a valuable software package as well as organizational infrastructure, ERP system on organizational performance (Gupta A., 2000).

Organizations expect that ERP will create competitive advantages. In assuming that ERP create advantages, it is necessary to know what effects it has on an organizational performance. A lot of research is conducted into implementation issues and success and fail factors of ERP. ERP systems support business processes and can be used as a tool to help to realize other goals. It is interesting to see what the impact of ERP systems is on the organization, or what relations exist between ERP and management control. One specific aspect of management control is the area of Performance Management. Talking about managing performance, the next question that presents itself is: what exactly is meant by performance and how can performance be measured. ERP systems store all process data in a single database, so we could assume that ERP systems offer opportunities for better organizational performance.

The implementation of an ERP system in an organization is a very complex project. The implementation of such systems is difficult and involves a high costs, as well as considerable time and resources. Organizations contemplating such a project must be aware of the necessary commitments (Almahdi, 2015).

This issue was also discussed by Rahnavarda & Bozorgkhou (2014), that ERP implementation normally costs significantly and it is time consuming since it needs fundamental changes in processes, which creates tensions in most parts of the organizations and the outcome could be undesirable. In order to integrate the resource management and research excellence, ERP can contribute as one of the most advanced technology. However, implementing an ERP system is one of the main challenges in recent decades, so that organizations consider the investment in ERP systems as a significant strategy, which creates competitive advantage for many organizations. In addition to the tools being used, the most important success factor for any big company is its culture and organizational structure if the company's structure is not well organized; it might be the root cause for the

failures of the used ERP tool. As in the case of small companies ERP is not mandatory since its cost is greater than the benefits.

1.2. Overview of ethio telecom

The introduction of telecommunications services in Ethiopia dates back to 1894 and the Ethiopian Telecommunications Corporation is the oldest public telecommunications operator in Africa. The Imperial Board of Telecommunications of Ethiopia, which became the Ethiopian Telecommunications Authority in 1981, was placed in charge of both the operation and regulation of telecommunication services in the wake of the market reforms. In 1996, the Government established a separate regulatory body, the Ethiopian Telecommunication Agency (ETA) by Proclamation 49/1996, and during the same year, by regulation 10/1996, it was changed to Ethiopian Telecommunications Corporation (ETC). Again by France telecom contract management it was radically transformed to ethio telecom in December 2, 2010. The contract was aimed at uplifting the service of ethio telecom to international standards and to facilitate technology transfer for domestic professionals. France telecom brought major international management practice. ERP is among transformational change brought by this contract management. Currently ethio telecom launched different ERP modules throughout the organizational unit of the company; applied different Finance modules, Supply Chain, Human Resource Management, Project management and others as well (http://www.ethio telecom.et and different internal company publications).

1.3. Statement of the Problem

Organizations may be composed of different dispersed units that require integration. Therefore, managers can focus on information and communication technologies (ICT) to integrate information and communication across units of an organization. Currently, a popular approach to the development of an integrated enterprise-wide system is the implementation of an ERP system. By the time of ERP implementation, organizations may face many challenges both pre and post implementation, common challenges organizations face mainly to implement are, such as international trade barriers, economic liberalization,

globalization and privatization, have made a heavy burden on organizations specifically in developing countries, Ethiopia. After implementation probable challenges could arise from both internally, employee's resistance and externally, supplier's and customer's non-fitness. But once implemented properly, ERP system can successfully integrate the processes of each department, and which ultimately enhance efficiency and effectiveness of the organization, in turn, increase clients' level of satisfaction and easily and rapidly share information with in the whole enterprise (Beheshti, 2006).

Various findings say, IS in organizations nowadays has expanded to improve the performance of employees through the use of IT. Explicitly, despite the expansion of ERP implementation in developing countries, yet there are failures and difficulties facing the implementation of ERP systems. Based on this context, the study provides an opportunity for researchers and practitioners to understand and resolve some of the important issues associated with the use and implementation of ERP systems specifically in Ethio telecom and generally in organizations in Ethiopia who are experiencing similar context and situations (Lessa et al., 2011).

As disused by Goeun (2013), Unlike other information systems, the major problems of ERP implementation are not technologically related issues such as technological complexity, compatibility, standardization, etc. but mostly about organization and human related issues like resistance to change, organizational culture, lack of skill of users, incompatible business processes, project mismanagement and top management commitment.

After implementing ERP project, Ethio telecom is facing continuous system problem. During system down the company employees are back to their manual work which is more time taking and when the system recover staffs are forced to insert the data they worked manually and it creates high work burden for the staffs. As reported on continuous ERP evaluation reports the other challenge the company face after implementing ERP is that lack of skill of users, lack of Commitment of top management, poor IT infrastructure and lack of adequate support and knowledge transfer from vendors' side.

Therefore, the aim of this study is to assess the practices and challenges of ERP system implementation in Ethio Telecom.

1.4. Research Question

This study will try to answer the following questions:

1. What are the major benefits that Ethio Telecom realized from implementing ERP?does
2. What are the major challenges that Ethio Telecom faced from implementing ERP?
3. What does the implementation practice of ERP look like in Ethio Telecom?

1.5. Objective of the Study

1.5.1. General Objective

The general objective of the study is to assess the benefits and challenges of enterprise resource planning (ERP) implementation in Ethio telecom

1.5.2. Specific Objectives

The specific objectives of the study that the researcher aimed to address is:

- To identify challenges in the process of implementation of ERP system.
- To investigate the benefits in the implementation of ERP system.
- To investigate which ERP potential benefits and challenge's considered as a top and least by Ethio Telecom users and compare it with the valuable literature.

1.6. Significance of the Study

The study is expected to give both practical and theoretical significance. It was worth doing because it helps the company to look at its problems and provides additional input for top management in designing ways to improve the current gaps in order to enhance organizational performance. In line with this, the study will serve as an input for higher officials of the company and concerned government bodies to look at designing the strategy competitive in order to win the future competition in this sector. It will essentially show the dimensions of ERP effect on organizational performances. To the management of Ethio telecom specifically to the respective divisions, the findings and results that will be reported in this study will provide a more reliable measure and perspective for describing and evaluating the effectiveness of ERP system. It will Provide additional information to

existing literature on the effect of ERP system and become as a benchmark for another researcher.

1.7. Scope of the Study

The scope of the study was limited to the assessment of the practices and challenges of ERP system implementation in Ethio Telecom head office staffs only. From different ERP function this paper focused only ERP project implementation from HR, supply chain and finance department angle. The reason behind is that: Most of the staffs who participate during feasibility study and system development phase are currently working in this area. The system was first implemented in those department and they have more experience concerning this system. Almost all the staffs who are working on this area have worked their day-to-day activity by using ERP.

The study encompasses the assessment of the practices and challenges of ERP implementation restricted to Ethio telecom Head office, which is found in Addis Ababa from the countrywide branches of the company. The main reason of selecting this geographical location is mainly due to the geographical constraint.

The study made the necessary assessment focusing on the ERP implementation of the company from 2018 to 2020. The reason for not using the data before 2018 is to get recent and reliable data.

1.8 Definition of Terms

ERP (Enterprise resource planning) - ERP system has been one of the most popular business management systems, providing benefits of real time capabilities and seamless communication for business in large organizations (Seo, 2013).

IS (Information System) – Jalil, & Zaouia, A., (2016) - software and hardware systems that support data intensive applications.

HR (Human resources) - are defined as firm's knowledge, experience, skill and commitment of the employees to the firm; their relations with each other and with others outside the firm. They are the most important firm asset, the ones that research, design, project and differentiate the firm from other firms (Albana,B.Q & Envert,K, 2015).

SCM (Supply chain management) - is a set of approaches used to efficiently integrate suppliers, manufacturers and warehouses so that merchandise is produced and distributed at the right quantities, to the right location and at the right time in order to minimize system wide costs while satisfying service-level requirements (Martin Christopher ,2011).

1.9 Organization of the Study

This study comprises five chapters. The first chapter attempts to present introduction of the study which consists of background of the study, background of the organization, statement of the problem, study questions, objectives of the study, and definition of terms, significance of the study, scope of the study, limitation and organization of the study. The second chapter reveals review of different literatures. This includes various theories and concepts on ERP system implementation and related empirical reviews. The third chapter contains the research methodology and design contains research design, data collection, Sample design and size, data presentation and analysis, reliability and validity.

The fourth chapter deals with data presentation, interpretation and analysis of the study. The last chapter comprises three sections, which include summary of findings, conclusions, and recommendations. A summary of findings outline and thereby giving answers to the research questions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This part of the study attempts to present a brief theoretical framework, views of different scholars which are one way or the other pertinent to the study and it includes what ERP mean, and the benefits to be obtained through ERP implementation, the historical background of ERP system and its related evolutional stags, empirical literature review, detail review of benefits and challenges and their relationship as well as conceptual framework.

2..1.1 Theoretical Framework

2.1.2 The meaning of ERP

According to O'Leary (2000), Enterprise Resource Planning (ERP) is a computer based system designed to place companies' major activity areas: planning, production and customer service under an umbrella. ERP system is a software package of different modules such as fixed assets management, controlling, financial accounting, manufacturing, human resources, planning and development and so forth. Each module is business process specific. Generally, companies choose one ready-made package available for their industry but it is also common to select the modules that best meet their needs.

According to Lineke (2014), ERP systems are computer applications that are used by companies in many industries in addition its supports data integration and support for best practice processes. The data integration means the data only entered once, after which they are available for use throughout the organization. As noted by Goeun & Linda (2003), also support the above listed points by ERP is the process of integrating all the business functions and processes in an organization to achieve numerous benefits. First, a single point of data entry helps to reduce data redundancy while saving employee's time in entering data, thereby reducing labor and overhead costs. Second, the centralization of information, decision making, and control leads to increases in efficiencies of operations and productivity, as well as coordination between departments, divisions, regions, and even countries.

As stated by Almahdi (2015), Enterprise Resource Planning (ERP) system solutions are

currently in high demand by both manufacturing and service organizations, because they provide a tightly integrated solution to an organization's information system needs. ERP allows professional people to manage their company in one system that integrates the entire business process and creates a wide enterprise view of significant corporate information.

In addition according to Nafjan & Mudimign (2005), Enterprise resource planning (ERP) system as a business management system that comprises integrated sets of comprehensive software, which can be used, when successfully implemented, to manage and integrate all the business functions within an organization. These sets usually include a set of mature business applications and tools for financial and cost accounting, sales and distribution, materials management, human resource, production planning and computer integrated manufacturing, supply chain, and customer information.

Generally Enterprise Resource Planning (ERP) is software that attempts to integrate all departments and functions across a company in to a single computer system that can serve all those departments' particular needs.

2.1.3 Evolution of ERP

According to E.M. Shehab (2004), the term ERP was invented in 1990 by Gartner, but its roots date to the 1960s. Back then, the concept applied to inventory management and control in the manufacturing sector. Software engineers created programs to monitor inventory, reconcile balances, and report on status. By the 1970s, this had evolved into Material Requirements Planning (MRP) systems for scheduling production processes.

In the 1980s, MRP grew to encompass more manufacturing processes, prompting many to call it MRP-II or Manufacturing Resource Planning. By 1990, these systems had expanded beyond inventory control and other operational processes to other back-office functions like accounting and human resources, setting the stage for ERP as we've come to know it.

As cited by E.M. Shehab (2004), Currently ERP systems contain Web components for e-business and an international communication which enables both manufacturing and service sectors to improve the information flow across multiple sites, even in different

countries. ERP system has features that enable to translate language into consideration. Of course, languages are rarely translated with 100 per cent accuracy, but the systems have the ability to communicate through the language barrier. Due to exchange rates availability via the internet at real time ERP have ability to conduct business transaction with real time adjustments for currency values. Various human resources laws and regulations unique to individual locations also can be set up in to ERP systems. The ERP systems allow managers to access business transactions that are conducted anywhere within their multi-site ERP system. Improving the information flow will lead to better visibility of product and customer information at any of the multi-site location whenever required.

Figure 1; ERP Evolution

Source: The Evolution of ERP: A Historical Perspective, M.A. Rashid (2002, P-4)

As per to Mafaz (2005), ERP has expanded to encompass business intelligence (BI) while also handling "front-office" functions such as sales force automation (SFA), marketing automation and ecommerce. With these product advancements and the success stories coming out of these systems, companies in a broad range of industries from wholesale

distribution to ecommerce use ERP solutions. As a result, companies of all sizes and a wide range of industries are transitioning to ERP systems. When you stop to consider the benefits of ERP, it's easy to see why it's become so popular and why its use will continue to grow so rapidly.

2.1.4 Functions of ERP

Rashid et al., (2002), different ERP vendors provide ERP systems with some degree of specialty but the core modules are almost the same for all of them. Some of the core ERP modules found in the successful ERP systems is the following:

- Accounting management
- Financial management
- Manufacturing management
- Production management
- Transportation management
- Sales & distribution management
- Human resources management
- Supply chain management
- Customer relationship management
- E-Business

2.1.5 Benefits of ERP system

Implementation of ERP project created benefits for the organization. According to Hossain, Patric & Rashid (2002), the adoption of an ERP system will provide benefits to introduce new procedures that will eradicate existing inefficiencies. Attitudes favorable to the adoption of ERP systems will be enhanced to the extent that ERP systems are perceived as agents of changed processes.

According to Mafaz (2005), Organizations in developed countries have recognized ERP systems as effective management systems leading to excellent planning and scheduling capability and significant improvements in productivity. Better customer service, higher return on investments and greater reduction in material costs are other benefits expected from an ERP system.

As stated by Goeun (2013), the global village concept has introduced a whole new way of doing businesses, forcing organizations to redefine their processes by leveraging IT as a strategic business tool to gain the competitive advantage and successfully achieve the goals of the organization. Most ERP vendors provide benefits to update procedures and align with perceived best practices to meet changing business needs more quickly.

As stated by Priya (2016), integrated system architecture is a major component of the system as the integration enables an enterprise to access the same system across different demographics. The software can integrate high volume of data as well as processes across many departments and geographies. It further empowers an enterprise to move their products much quicker, reconcile shipments faster, and many more. Nonetheless, the enterprise resource planning software provides organizations access to a multitude of crucial data which was either unavailable or impossible to derive with other software. Human resources functions can be improved through ERP by removing redundancy and tediousness of daily activities. This allows more time to be spent on value-added duties, which in turn leads to a more fulfilling job for employers. As employees become more empowered, they become more involved in decision making. With the right training and guidance, they can make decisions on their own without the close, watchful eye of their supervisor, allowing their supervisor to spend more time on value- added activities.

As stated by Oliver & Romm (2002), By adopting ERP technology organization have benefits that lowers the costs of production, a producer organization may be able to secure a price advantage and thereby achieve a greater market share or reap larger than usual profits in addition improving the performance of existing activities (speed, accuracy, economics) and integration of data and systems to avoid duplication, inconsistency and misinformation. A large sum of money was spent by Firms on information systems through expecting the benefits to have strategic values. In today's dynamic economy, continuously generating new knowledge, combined with operational efficiency and effective delivery mechanisms increase the strategic value of a firm. Organizations invest in ERP systems to achieve important benefits. These benefits may come in the form of improved business productivity such as shortened lead time, lower cost and efficiency communication among functional boundaries In the

ERP system environment.

As stated by Ross (1999), articulated that as a business and strategic perspective implementing ERP is seen as way to improve corporation's effectiveness and efficiency, reduce their operating, personnel, inventory and IT costs, and improve their productivity, business growth, production scheduling, delivery time, customer service, and overall quality. Additionally, data visibility and timely information is important to make better business decisions.

Table 2.1 List of tangible and intangible Benefit with the related Author

Categories of benefits	List of Benefits	Authors		
		Mafaz M.	Emad M. Kamhawi	Ömür Y. Saatçioğl u
Tangible Benefits	Reduction of employees	X	X	
	Reduction/optimize of inventory/lower inventory level	X	X	X
	Better resource management			X
	Better logistics			X
	Improved productivity	X	X	X
	Reduce cycle time		X	X
	Faster closing of financial cycles	X		X
	Quality improvement			X
	Improvements in order management/optimize supply/improved order cycle	X	X	X
	Generate product differentiation			X
	Increased IT infrastructure capability			X
	Enhancement of cash flow management	X		X
	Reduction in procurement costs	X		
	Reduction in logistics and transportation costs	X	X	
	Increase of revenue and profits/Support sales growth/	X	X	X
	Improvement on-time delivery performance/reduce time to market	X	X	X
	Reduction in the need for system maintenance/replace mainframe	X	X	
	Improved information and processes/enhance our poor quality data	X	X	

	Internal integration/Integrate operation	X	X	
	Standardize our processes		X	
	Possible redesigning of ineffective business functions			X
	Faster, more accurate transactions			X
	Control of flow of goods			X
	Financial flows control			
	Information flows control			X
	Update our obsolete systems		X	
	Improved or new business processes/Re-engineer our process/more efficient business process	X	X	X
Intangible Benefits	Better visibility of corporate data/integrate data	X	X	
	Improved /enhance responsiveness to customers/quickened information response time	X	X	
	unexpected reduction in cost	X	X	
	Support organizational changes			X
	Increased(business) flexibility	X	X	
	Enhanced/Boost business performance	X	X	X
	Cost efficiency in staff	X		
	Inventory, procurement improvement	X		
	Build common visions			
	Cash/order management, improvement in productivity	X		X
	Overall profitability	X		
	Facilitate Business learning			X
	Enhance cooperation with people outside the organization/Improved interaction with customer		X	X
	Empower our user		X	
	Standardize our databases		X	
	Respond to competitive pressures		X	
	Enhance managers' individual decision-making abilities/Improve decision making		X	X
	Support collaborative decision making inside the organization/better coordination and cooperation between function and different company department.		X	

As cited by Mafaz M. (2005), the organizational impacts of ERP systems classified into tangible and intangible benefits. Whereas Joseph K. (2015), cited five dimension developed benefit of ERP system namely, operational, managerial, strategic, IT infrastructure and organizational, other researcher list out various benefit of ERP system and the researcher agree with the conclusion cited in Joseph K (2015), that ERP benefits was a continuous process with benefit realized at different rate in different core processes

Table 2.2 List of five dimensions of Benefits with the related Author.

Categories of Benefits	List of Benefits	Authors		
		Lineke, S	Joseph K. Nwankp	Kenneth E, Murphy & Steven John
Operational	Cost reduction	X	X	X
	Cycle time reduction	X	X	X
	Productivity improvement	X	X	X
	Quality improvement	X	X	X
	Improved customer service	X	X	X
Managerial	Better resource management	X	X	X
	Improved decision making and planning	X	X	X
	Performance improvement	X	X	X
Strategic	Support business growth	X	X	X
	Support business alliance	X	X	X
	Build business innovation	X	X	X
	Generate product differentiation	X	X	
	Assist cost/Build cost leadership	X	X	X
	Build external linkages.	X	X	X
IT infrastructure	Build/support business flexibility	X	X	X
	Reduced IT cost	X	X	X
	Marginal cost of business units	X	X	
	Increased capability for quick implementation of new applications	X	X	X
	Support IT	X	X	
Organization	Support organization structure change	X	X	X X
	Facilitating employee/business learning	X	X	X
	Empowering workers	X	X	X

	Building common visions.	X	X	X

2.1.6 Challenge of ERP System

Implementation of any system has its own challenges especially when the project is new to the organization. According to Goeun (2013), In spite of ERP's significant growth there are a number of challenges that companies may encounter when implementing ERP. Boo Young (2007), stated many engineering and construction firms know how beneficial ERP systems are, but they still hesitate to adopt these systems due to their high cost and risk. The most known challenges include resistance to change from the staff, lack of support from the top management, organizational culture and lack of continuous training.

This issue also noted by Goeun (2013), ERP implementation have its own challenges like Lack of senior manager commitment, ineffective communications with users, insufficient training of end-users, failure to get user support, lack of effective project management methodology, attempts to build bridges to legacy applications, conflicts between user departments, composition of project team members, failure to redesign business process and misunderstanding of change requirements. ERP systems are complex systems that face high probability of failure. Implementing such systems need careful planning and guarding against factors for failure. In addition, according to Sanchita (2013), there are challenges during implementation of ERP it includes:

- Employee orientation- employees sometimes does not accept changes.
- Working culture- Also affects the acceptance of the implementation of new system in an organization.
- Security concern- A system or technique designed for one country may not be effective in other country.
- Cost factor- Cost is an important factor to be taken into consideration before implementation of the ERP system.

- ➢ Training and Learning- The process of training and adaptation to the ERP system be a cumbersome and time consuming process.
- ➢ Technical limitation- An organization cannot depend on technological websites or software completely to handle every issues related to HR.

According to Bingi, sharama &Godla (2006), implementing an ERP causes massive change that needs to be carefully managed to reap the benefits of an ERP solution.

Critical issues that must be carefully considered to ensure successful implementation include commitment from top management, reengineering of the existing processes, integration of the ERP with other business information systems, selection and management of consultants and employees, and training of employees on the new system. Companies could spend hundreds of millions of dollars and many years implementing ERP solutions in their organizations. Once an ERP system is implemented, going back is extremely difficult; it is too expensive to undo the changes ERP brings into a company. Most enterprises in an attempt to carry out ERP often end up in failure and it seems the probability of the mishaps is considerably high. There are several failed ERP attempts and companies lost not only the capital invested in ERP packages and millions paid to outside consultants, but also a major portion of their business. Implementing an ERP system is a careful exercise in strategic thinking, precision planning, and negotiations with departments and divisions.

According to Goeun (2013), it is important for companies to be aware of certain critical issues before implementing any ERP package. Careful consideration of these factors will ensure a smooth rollout and realization of full benefits of the ERP solution. ERP implementations have sometimes failed to achieve the organization's targets and desired outcomes. Much of the research reported that the failure of ERP implementations was not caused by the ERP software itself, but rather by a high degree of complexity from the massive changes ERP causes in organizations.

Hence; depending on the degree of failure according to our existing practical situations here are the major ERP challenge areas: -

Lack of Top Management Commitment

The IT literature has clearly demonstrated that for IT projects to succeed top management support is critical. This also applies to ERP implementations. Implementing an ERP system is not a matter of changing software systems, rather it is a matter of repositioning the company and transforming the business practices. Due to enormous impact on the competitive advantage of the company, top management must consider the strategic implications of implementing an ERP solution. An organization goes through a major transformation, and the management of this change must be carefully planned and accurately implemented. The top management must not only fund the project but also take an active role in leading the change Bingi, et al., (2006).

According to Eldabi & Naseer (2016), Management may not be clear about the needs and requirement of IT system such as ERP that why and how they are adopting it or whether such a capital investment is needed or no. In addition Intervention from management is often necessary to resolve conflicts and bring everybody to the same thinking but most of the time top management lacks this. Since ERP implementation inevitably causes organizational changes; it requires the engagement of senior management from across the organization that able to resolve conflicts. Without the commitment of senior management, ERP implementation has a high risk of failure.

Organizational Resistance

Chen et. al., (2009) stared that No matter how the revolution proceeds; the main target appeal in the revolution is the employees. For most employees, because they have been accustomed to the past traditional business mode, once encountering a revolution, they will be unwilling to cooperate and will resist in order to keep a stable condition.

As stated by Nafjan & Mudimign (2005), when implementing an ERP system, top management commonly faces an unwanted attitude from potential users for one reason or another, they resist the implementation process.

Reengineering

Bingi et. al., (2006) Implementing an ERP system involves reengineering the existing business processes to the best business process standard. ERP systems are built on best practices that are followed in the industry. One major benefits of ERP comes from

reengineering the company's existing way of doing business. All the processes in a company must conform to the ERP model. The cost and benefits of aligning with an ERP model could be very high. This is especially true if the company plans to roll out the system worldwide. It is not very easy to get everyone to agree to the same process. Sometimes business processes are so unique that they need to be preserved and appropriate steps need to be taken to customize those business processes.

Shortage of ERP Consultants

According to Salmela & Koskivara (2013), because the ERP market has grown so big so fast, there has been a shortage of competent consultants. The skill shortage is so deep that it cannot be filled immediately. Finding the right people and keeping them through the implementation is a major challenge. ERP implementation demands multiple skills, functional, technical and interpersonal skills. Again, consultants with specific industry knowledge are fewer in number. There are not many consultants with all the required skills. Managing a consulting firm and its employees is even more challenging. The success or failure of the project depends on how well you meet this challenge.

Implementation Time

The implementation takes a long time and spends very high estimated cost Chen et. al., (2009) ERP systems come in modular fashion and do not have to be implemented entirely at once. Several companies follow a phase-in approach in which one module is implemented at a time. The length of implementation is affected to a great extent by the number of modules being implemented, the scope of the implementation (different functional units or across multiple units spread out globally), the extent of customization and the number of interfaces with other applications. Also, as the scope of implementation grows from a single business unit to multiple units spread out globally, the duration of implementation increases. A global implementation team has to be formed to prepare common requirements that do not violate the individual unit's specific requirements.

Implementation Costs

According to Shanab, Shehab & Khairallah (2015), Organizations must realize the high

cost of ERP implementation and assess if it is ready for such step. ERP implementation requires a wide range of knowledge and external expertise; without external help it is really hard for any organization to be able to implement ERP successfully. In addition to the previously mentioned costs, ERP implementation cots also include training of staff and the customization of the system to fit with existing firm interfaces. Even though the price of prewritten software is cheap compared with in-house development, the total cost of implementation could be three to five times the purchase price of the software. The implementation costs would increase as the degree of customization increases. The cost of hiring consultants and all that goes with it can consume up to 30 percent of the overall budget for the implementation. Employees could double or triple their salaries by accepting other positions. Retention strategies such as bonus programs, company perks, salary increases, continual training and education, and appeals to company loyalty could work. Other intangible strategies such as flexible work hours, telecommuting options and benefits to work with leading-edge technologies are also being used.

Selecting the Right Employees

Bingi et. al., (2006) Companies intending to implement an ERP system must be willing to dedicate some of their best employees to the project for a successful implementation. Often companies do not realize the impact of choosing the internal employees with the right skill set. The importance of this aspect cannot be overemphasized. Internal resources of a company should not only be experts in the company's processes but also be aware of the best business practices in the industry. Internal resources on the project should exhibit the ability to understand the overall needs of the company and should play an important role in guiding the project efforts in the right direction. Most of the consulting organizations do provide comprehensive guidelines for selecting internal resources for the project. Companies should take this exercise seriously and make the right choices. Lack of proper understanding of the project needs and the inability to provide leadership and guidance to the project by the company's internal resources is a major reason for the failure of ERP projects.

Training Employees

Bingi, et. al., (2006) Training and updating employees on ERP are a major challenge. People are one of the hidden costs of ERP implementation. Without proper training, about 30 percent to 40 percent of front-line workers will not be able to handle the demands of the new system. The people at the keyboard are now making important decisions about buying and selling important commitments of the company. ERP systems are extremely complex and demand rigorous training. It is difficult for trainers or consultants to pass on the knowledge to the employees in a short period of time. This "knowledge transfer" gets hard if the employees lack computer literacy or have computer phobia. In addition to being taught ERP technology, the employees now have to be taught their new responsibilities. With ERP systems you are continuously being trained. Companies should provide benefits to enhance the skills of the employees by providing training benefits on a continuous basis to meet the changing needs of the business and employees. Increasing reports point to poor training as a major cause behind failed ERP projects. Not just education of the technical staff, but of the user community who are supposed to actually work with the system.

ERP changes the way companies do business but, instead of training everyone in the company on how to do business differently, they are trained on new computer software.

As cited by Ömür Y. Saatçıoğlu (2009), ERP software have some Challenges which are caused by the variation between functionality offered by the package and that required by the firm in ERP projects. While trying to adjust the ERP software and the system in the enterprise, there will be some barriers. Challenges cause firms to experience a decrease in organizational performance instead of realizing improvements. , identification of Challenges in ERP post-implementation could be a very complicated task. Due to the size and complexity of an ERP system barriers to organizational activities may often exist within the organizational.

As cited by Ömür Y. Saatçıoğlu (2009), Challenges categorized as people, process or technology related challenges. While Geo Chao & Miguael (2010), develop post implementation challenges consists of two hierarchical levels ranging from general Challenges categories (e.g. organizational Challenges) to specific Challenges items (e.g. lack of top management support) and categories challenges as cultural, organizational and

system Challenges.

Table 2.3 possible potential Challenges of ERP system implementation

List Challenges	Type of Challenges	Ömür Y. Saatçıoğl	Geo Chao & Miguael
Difficulties in changing to new from old systems	Technical	X	
Unavailability of skilled project people	People	X	
Insufficient supports from system	System		X
Turnover of key project people	People	X	
Low user involvement	Organizational		X
Insufficient use of critical thinking of employees	Cultural		X
Short-term behavior of top managers	Organizational		X
System inflexibility	System		X
High costs of implementation	Technical	X	
Difficulties in estimating project	People	X	
Significant resistance from staff	People	X	
Unwilling to disclose problems, faults and	Cultural		X
In house resource constraints	Technical	X	
Unclear strategic direction and vision for	People	X	
High context and implicit form of	Cultural		X
Coordination between functional groups / Inefficient	People/Organizational	X	
Lack of commitment from top managements	People	X	
Lack of top management support	Organizational		X

Deficient design of the system	System		X
Incompetent consultants People Bugs in	Technical	X	
Lack of discipline	People	X	
Poor reporting procedures	Technical	X	X
High cost for add-on & further system	Process		X
Lack of process engineering	Process		X
Lack of in-house IT experts	Organizational		X
Poor software functionality	Technical	X	
Inexperienced system consultants	System		X

2.1.7 ERP Implementation

Implementation of any innovation has been referred to as a re-invention of the technology and simultaneous adaptation of the organization. ERP implementation as the process of developing the initial business case and planning the project, configuring and implementing the packaged software, and subsequent improvements to business processes (Ahmad, 2015).

ERP implementation success would not be possible without select critical success factors. There are numerous critical factors which contribute to the ERP success or failure. ERP implementation is considered successful when the implementation of the system results in reduced costs, increased service levels, various benefits to an organization's internal and external environment, maintains adequate project management, user involvement and adequate performance and security of the ERP system. While an ERP implementation is considered failure, when the implementation of the system results in delayed implementation, going over budget and needing additional funding, potential loss of authorization security, loss of data confidentiality, loss of authentication safety, server downtime, or ultimately system failure (Ahmad, 2015).

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 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 of ERP. Those important points were identified as critical success factors (Li & Sylvia 2005).

As disused by Goeun (2013), ERP systems implementation is a set of complex activities, involving all business functions and often requiring between one and two years of effort, thus companies should have an effective project management strategy to control the implementation process, avoiding overrun of budget and ensuring the implementation within schedule. Having a realistic time frame is very important. If the target completion time schedule were unrealistically short, the pressure to rush through would result in the implementation being carried out in a haphazard manner. On the other hand, if the implementation delayed for too long, people would tend to lose faith and patience, which also will result in low morale and resistance. Conducting periodic project status meetings in which each team member reports progress and problems is an invaluable means for evaluating the progress of the ERP implementation. Selecting the right project leader is also important for the project implementation success. Another decisive element of ERP implementation success or failure is related to the knowledge, skills, abilities, and experience of the project manager as well as selection of the right team members, which should not only be technologically competent but also understand the company and its business requirements.

2.2 Empirical Literature Review

Su and Yang (2010), describe the production of real time data shared across the organization and consequently the integration and automation of business processes as the main benefits of ERP system while in the new business environment automation, effectiveness and efficiency in operation and real time data are important factors for business success and to obtain these benefits successful ERP system implementation is a prerequisite.

An attempt has been made to review the relevant and available studies and research work

and the results are summarized as follows.

Eldabi, T.& Naseer,A.(2016), investigate factors that contribute to the successful implementation of enterprise resource planning (ERP) systems concluded that the main reason ERP systems are pursued by top management are for efficiency and cost reduction so that a business may stay competitive in the marketplace. The study analysis of results reveal that having clear goals and objectives, user training and education, interdepartmental communication as well as user involvement in evaluation, modification and implementation are considered most critical success factor. There are factors found to be critical in the failure of ERP implementations: dilemma of internal integration, poor understanding of business implications and requirements, lack of change management, poor data quality, misalignment of IT with business, hidden costs, limited training and lack of top management support.

Emad M. Kamhawi, (2008), recommended that ERP system usage is directly related with ERP benefits but the association is moderated by the degree of knowledge integration mechanisms within the firm. The results also disclose that technical resources, organizational fit and the extent of ERP implementation are key drivers of ERP system usage. The benefits derived from ERP should not be credited to one single type of benefits. Operational, strategic, and technical types of benefits indicated similar levels of importance. Also it was found that many of the benefits with high rankings in this survey such as improving productivity, inventory reduction, new improvement processes, and customer responsiveness, have been found as prime benefits as in previous studies.

According to Ömür Y. Saatçıoğlu, (2009), firms targeting to succeed in ERP projects should give emphasize to benefits of ERP system. Better management and controlling functions, financial flows control, information flows control, control of flow of goods and quickened information response time are the top benefits gained in the ERP projects. While cycle time reduction, lowered inventory levels, productivity improvement, and performance improvement, generate product differentiation, and facilitate business learning are the least important benefits .In addition the least important benefits fall in three categories as strategic, operational, and organizational.

Emad M. Kamhawi, (2008), illustrated large capital investments requirement, intensive

training, and having other important priorities were the reasons from a possible challenges, which were found to be statistically significant reasons for not implementing ERP systems. Difficulties in changing to new from old systems, lack of in-house specialists, difficulties in estimating project requirements, significant resistance from staff, high costs of implementation, and poor reporting procedures are the most important challenges. While lack of commitment from top leadership, under performed project team, unclear strategic direction and vision for the use of ERP and lack of discipline the least important challenges.

Ten critical success factors should be considered during the ERP implementation as the most important factors. These factors are top management support, user involvement, clear goals and objectives, strategic IT planning, user training and education, vendor support, teamwork and composition, monitoring and evaluation of performance, and education on new business Processes. These top critical factors can help companies to achieve successful implementation of ERP system (Ahmad, 2015).

According to Davenport (2000), adequate hardware and networking infrastructure are required for ERP application. Enterprise System cannot be without sophisticated information technology infrastructure. Three primary attributions of success were identified: willingness to change to new computer applications, effort, and persistence .In addition to the infrastructure, clearly, the software configuration has a critical influence on the implementation process and outcome.

2.3 Conceptual Framework

A conceptual framework can be defined as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation (Reichel & Ramey, 1987). As cited in literature ERP is a software system that integrates all business units and make business process easy and organized one .In addition, if the companies adopt such a system tool that helps to use its resources effectively and efficiently this leads successful implementation of ERP. The below conceptual frame work comes from different related literature that has been before and reviewed for this study.

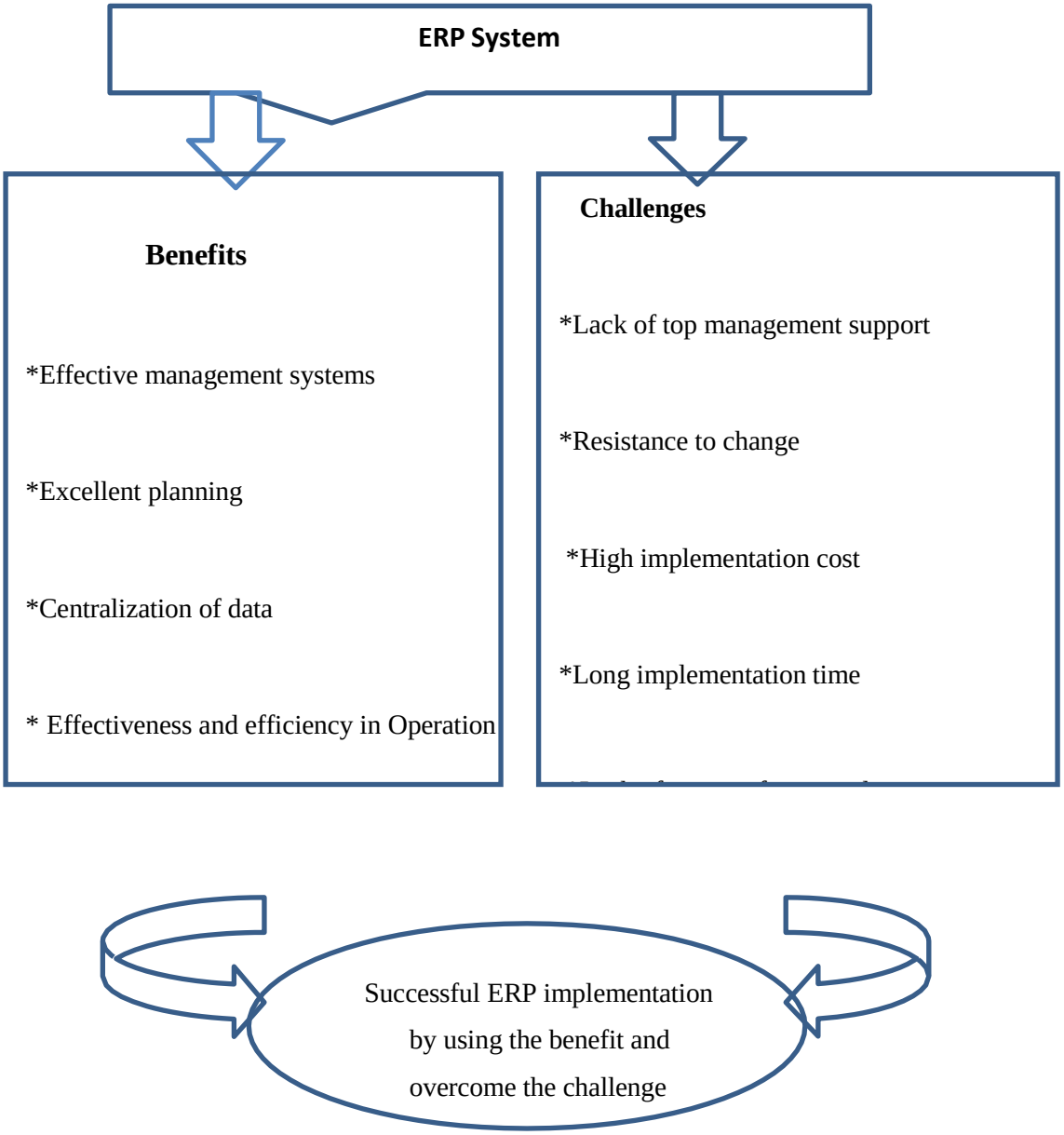
As we have seen from the below conceptual frame work since ERP is one of a system project it have its own benefits and challenge. So any organization that implements ERP

by enjoying the benefits must overcome the challenge. ERP is one of the projects which need a huge amount of cost, resource and time so to be effective in ERP implementation organization should give high focus.

When implementing system project like ERP organization can get benefit. Frist it creates Effective management systems since any decision making process done by using this system save time and makes the decision making process more effective. The second one is excellent planning and scheduling capability by using ERP organization has the benefits to plan for the future and to schedule every activity. It also has the benefits for new or improved procedure because after implementing the system the existing backward and time taking working procedure can be changed.

The challenge of ERP includes; lack of top management support, resistance to change, high implementation cost, long implementation time, ineffective communications, lack of support from vendors, high training cost for employees, lack of selecting the right employees and ERP vendors. These challenges are a big hindrance for any organization that had been implemented this system. So organization should give high focus and plan properly for mitigate each challenges.

Figure 2: Conceptual frame works



Source: Own computation based on the literature

2.4 Chapter Summary

Enterprise Resource Planning (ERP) is software that attempts to integrate all departments and functions across a company in to a single computer system that can serve all those departments' particular needs (Seo, 2013).

Eldabi, T.& Naseer,A.(2016),Enterprise Resource Planning provide valuable role in organization, it is one of information and communication technology that have been

developed for integrating varies activities of the firm, to improve information flow, reduce cost, streamline business processes, better resource management, improve productivity offer product Variety, establish linkage with business partners, Support organization structure change, reduce cycle time, building common visions and to reduce response time to customer needs. All these benefits cannot realize without successful implementation of ERP system. The ERP implementation is considered successful when the implementation of the system results in reduced costs, increased service levels, various benefits to an organization's internal and external environment, maintains adequate project management, user involvement and adequate performance and security of the ERP system.

According to Goeun (2013), In spite of ERP's significant growth there are a number of challenges that companies may encounter when implementing ERP. Boo Young (2007), stated many engineering and construction firms know how beneficial ERP systems are, but they still hesitate to adopt these systems due to their high cost and risk. The most known challenges include resistance to change from the staff, lack of support from the top management, organizational culture and lack of continuous training.

ERP implementation success would not be possible without select critical success factors; The ERP implementation is considered successful when the implementation of the system results in reduced costs, increased service levels, various benefits to an organization's internal and external environment, maintains adequate project management, user involvement and adequate performance and security of the ERP system. While an ERP implementation is considered failure, when the implementation of the system results in delayed implementation, going over budget and needing additional funding, potential loss of authorization security, loss of data confidentiality, loss of authentication safety, server downtime, or ultimately system failure. In order to minimize the risks of failure of ERP projects an organization engages in a number of activities, such as post implementation review, support and maintenance. During post implementation stage as a result the organization needs to measure the impact of the ERP system on the organization post implementation phase (Ahmad, 2015).

Emad M. Kamhawi, (2008), recommended that ERP system usage is directly related with ERP benefits but the association is moderated by the degree of knowledge integration

mechanisms within the firm. The results also disclose that technical resources, organizational fit and the extent of ERP implementation are key drivers of ERP system usage. The benefits derived from ERP should not be credited to one single type of benefits. Operational, strategic, and technical types of benefit indicated similar levels of importance. Also it was found that many of the benefit with high rankings in this survey such as improving productivity, inventory reduction, new improvement processes, and customer responsiveness, have been found as prime benefits as in previous studies.

All in all, there is a knowledge gap in Ethiopian context due to the absence of studies, on the benefits and challenges of ERP implementation. In order to fill the identified knowledge gap concerning ERP implementation in general and in particular concerning study of benefits and challenges not studied. The researcher tried to undertake to increase the level of understanding about ERP implementation here in Ethio Telecom by which is operated specifically in Addis Abeba Head office.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1. Research Design

In order to attain the specific objectives of the study, the researcher is used a descriptive research design. Descriptive research method helps to describe the research setting as it is and also allow the use of both quantitative and qualitative approach (Malhotra, 2006).

A descriptive study attempts systematically to describe a situation, problem, phenomenon service or program or provides information about say, the living condition of community, or describes attitude towards an issue (Kumar, 2011). Thus, designing the research as a descriptive deemed to be most appropriate and was analyzed by using both qualitative and quantitative methods to clearly describe the detailed evidence about the facts on the ground.

3.2. Population, Sampling Techniques and Sample Size

From Addis Ababa telecom region, the Head Office is purposely selected with the assumption of representing the remaining regions and its most familiarity to the application of ERP system. Considering availability of data, the researcher selected three divisions namely Human Resource Management, Finance and supply chain in Head Office.

Briefly, in order to meet the desired study target, purposive sampling method was designed to select the three divisions (Finance, Human Resource and supply chain) from the other division found in Head Office, Due to the fact that the ERP system was applied fully with in these divisions from the beginning of its implementation than other divisions. The sample is drawn from the total staff of Ethio telecom working in Head Office at those divisions. Within each of the three division, representative's respondent were randomly selected for the survey. The total number of employees who are working at the Head office in the three divisions are 621.

The researcher was used the following sample size determination formula to determine the sample size of the population in ethio telecom, head office. The formula was developed by Yamane, Taro. (1967). It is calculated as follows;

$$\mathrm{n} = \frac{N}{1 + NE^2}$$

Where:

- ✓ n= is the sample size,
- ✓ N = is the population size, and
- ✓ e = is the level of precision or sampling error = (0.05)

$$n = \frac{621}{1+621(0.05)^2} = \mathbf{243}$$

Hence, the total sample size is 243. Since the number of people in each department is not the same, the number of samples for each department was calculated by the following formula:

$$n1 = \frac{nN1}{N}$$

Where:

- ✓ n= total number of samples
- ✓ N= total number of population
- ✓ N1= total number of population in each department
- ✓ n1= number of samples in each department

Table 3.1: Samples Taken from Each Department

Divisions	Total Number Of Employees	Number of Sample
Human Resource	152	59
Finance	148	58
Supply Chain	321	126
Total	**621**	**243**

3.3. Data Types, Sources and Collection Techniques

The researcher was used both primary and secondary source of data. Primary data was collected through semi-structured questionnaires on the effect of ERP system on ethio telecom organizational performance. Basically, primary data was generated from the survey

basically through both close and open ended questionnaires to assess the impact of ERP system on organizational performance. Apparently, reducing transactional cost, fulfilling taxation requirement, training and development, employee performance evaluation, standardize company information and finally generate information for decision will be the basic information gather from the survey. The information will be used for quantitative analysis on ERP system on the performance of the company.

In addition to the survey, qualitative information were generated through the interview of Key Informant Interview (KII). Three (3) KII were conduct with managers of each division in order to capture different information and views. Then, this interview assists to triangulate the finding gained through quantitative information.

Secondary source of data was collected from various sources such as reports, research journals on ERP system, published and unpublished materials and web sites of ethio telecom.

3.4. Method of Data Analysis

Based on the nature of the data collected through questionnaires, interview, and documents the following procedures and statistical tools were employed. Data was checked for consistency and completeness on daily basis then data was code, check, and enters to computer. Finally, it was processed and analyze by Statistical Package for Social Sciences v.25 (SPSS). To analyze the data, descriptive statistics was used. Furthermore, a description was making based on the results of the table and figure using mean value, percentage and standard deviation. The data collected through interviews and documents was analyzed qualitatively by descriptive statements. The results that were obtained from the interviews used concurrently to strengthen the analysis of the questionnaires.

According to Malhotra (2007), descriptive survey method helps the researcher in picturing the existing situation and allows relevant information using appropriate data collecting instrument. Finally, the results of descriptive were presented using appropriate table.

3.5 Validity

According to Kothari, (2004), Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure. Validity can also

be thought of as utility. In other words, validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested.

As stated above, questionnaire and interview was used to collect the primary data. Therefore, to assure validity of the instrument the researcher has given a chance for professionals on the area to review the questionnaire and it was finally validated by the advisor.

3.6 Reliability

Reliability is essentially the dependability of an instrument to test what it was designed to test. The appropriate test for reliability is inter-item consistency reliability which is popularly known as the Cronbach's coefficient alpha.

According to Joseph & Rosemary (2003), Cronbach's alpha reliability coefficient (α) normally ranges between 0 and 1. According to these authors, there is a greater internal consistency of the items if the Cronbach's alpha coefficient closes to 1.0.

Based on the following rule of thumb of (George & Mallery, 2003, p. 231), if "α > 0.9 – 'Excellent', α >0.8 – 'Good', α >0.7 – 'Acceptable', α >0.6 – 'Questionable', α >0.5 – 'Poor', and α <0.5 – 'Unacceptable'."

Table 3.2 Reliability Statistics

Cronbach's Alpha	N of Items
.904	35

Source: ethio telecom Human Resource Department 2021

As indicated in the above table, the Cronbach's Alpha test implies that reliability test of the study is located on "excellent" range.

3.7 Ethical Consideration

The researcher informed the participants of the study about the objectives of the

study, and consciously consider ethical issues in seeking consent, avoiding deception, maintaining confidentiality, respecting the privacy of all respondents, the study were in line with the organizations policy in relation to any intellectual property rights of the organization and concerning references, all the materials and sources are properly acknowledged. Finally, a researcher must consider these points because the law of ethics on research.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter deals with the data presentation, interpretation and analysis of the study. The chapter comprised of two sections. The first is background of the respondents showing sex, age group, level of education, work experience, and position of respondents using cross tabulation and the second part deals with major components on the benefits and Challenges of implementing ERP by using tables and consisting of mean and standard deviation, through SPSS version 25.

To achieve the main objectives of the research a total of 243 questionnaires were prepared and distributed to employees of ethio telecom head office staffs. In order to make the collected data suitable for the analysis, all questionnaires were screened for completeness. All returned incomplete questionnaires were considered as errors and ignored from the data. Out of these questionnaires, 213 of them were collected. Therefore, only 213 questionnaires were used for further analysis.

4.2 Background of Respondents

The first part of the questionnaire consists of the demographic information of the participants. This part of the questionnaire requested a limited amount of information related to personal and professional demographic characteristics of respondents. The table below shows the demographic characteristics of the respondents like sex, age, education, Work Experience and service year in the organization. The data collected from the respondents were analyzed as follows.

Table 4.1 Background of Respondents

Variable	Variable Categories	Frequency	Percentage
Sex	Male	149	70
	Female	64	30
	Total	213	100
Age	<25	0	0
	26-30	74	35
	31-40	90	42
	41 and above	49	23
	Total	213	100
Educational Level	Diploma	0	0
	BA/BSC	160	75
	Master	53	25
	Total	213	100
Work Experience	0-5	32	15
	6-10	64	30
	11-15	43	20
	16-20	40	19
	21 and Above	34	16
	Total	213	100
Division	Human Resource	52	24
	Finance	55	26
	Supply Chain	106	50
	Total	213	100
Current Position	Staff	159	75
	Supervisor	33	15
	Manager	21	10
	Total	213	100

Source: Field Survey, 2021

After summarized the collected data it is easy to see that the composition of the company employee is highly dominated by male employees, and takes 70% of position of the company whereas 30% of by female employees. This shows that the human resource of the company give attention for females at the process of hiring employees to make the composition proportionally.

Age of the respondents is one of the most important characteristics in understanding their

views about the particular problems; by and large age indicates level of maturity of individuals in that sense age becomes more important to examine the response.

It is evident from the table 4.1 that based on the response rate of the age, 35% of the employees are between the age 26 and 30, and the other 42% are between 31 and 40. Furthermore, 23 % of the employees are at the age of 40 or above, and no employees are either they are on the age of 25 or below that. This indicates that the company staffed with young and energetic employees. In other words, most of the employees are belonging in the productive age group.

Education is one of the most important characteristics that might affect the person 's attitudes and the way of looking and understanding any particular social phenomena. In a way, the response of an individual is likely to be determined by his educational status and therefore it becomes imperative to know educational background of the respondents. Based on the above table 4.1 the educational level of employees of the company, 75% of the employees are first degree holders and the other 25% of the employees have specialization at a master 's degree level and above, whereas no diploma holders. It can be concluding from the above table, majority of the employees have at least a first degree and we can say that human resource profile of the company in terms of educational background is in a good status.

As shown in Table 4.1 of respondents, 21% of the respondents hold managerial positions. Moreover, the other 15% of the respondents have supervisor position where as the remaining 75% of the respondents are staffs.

As illustrated in table 4.1 majority of the employees have relatively shorter existence in the company. And to be specific, 30% of the respondents have been working with the company for at least 6 to 10 years, whereas 15% of the respondents have an experience 5 years or less. Moreover, the other 20% of the respondents have an experience which spans from 11 up to 15 years while 19% of the respondents have been working with the company for at least 16 up to 20 years and the remaining 16% have longer experience which is 21 years and above in the company.

As it is already explained in the research design and methodology part, the researcher has focused on three department considering ERP implementation, and those departments

are considered as strata. Accordingly, out of the 213 employees who returned the questionnaire, 24% of respondents are from human resources division and 26% of respondents belong to finance division while the remaining 50% of respondents from supply chain division.

4.3 Presentation of the Benefits and Challenges of ERP Implementation

These sections discuss the summary statistics of each variable under the categories of Practices, Benefits and Challenges of ERP implementation. The researcher applies descriptive statistics especially frequency, mean and standard deviation for the sake of better understanding and summarization.

Table 4.3 Benefits of ERP System Implementation

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
Reduce organizational cost	0 (0%)	20 (9.4%)	11 (5.2%)	85 (39.9%)	97 (45.5)	4.22	0.92
Reduce paper work	0 (0%)	5 (2.3%)	21 (9.9%)	91 (42.7%)	96 (45.1%)	4.31	0.74
Short process cycle time	9 (4.2%)	13 (6.1%)	0 (0%)	109 (51.2%)	82 (38.5%)	4.14	1.00
Increase organizational performance	0 (0%)	16 (7.5%)	32 (15.0%)	85 (39.9%)	80 (37.6%)	4.08	0.91
Productivity improvement	0 (0%)	0 (0%)	43 (20.2%)	74 (34.7%)	96 (45.1%)	4.25	0.77
Quality improvement	0 (0%)	0 (0%)	31 (14.6%)	83 (39.0%)	99 (46.5%)	4.32	0.71
Performance improvement	7 (3.3%)	15 (7.0%)	29 (13.6%)	85 (39.9%)	77 (36.2%)	3.99	1.04
Better resource management	0 (0%)	0 (0%)	20 (9.4%)	102 (47.9%)	91 (42.7%)	4.33	0.64
Decreased financial close cycle	0 (0%)	15 (7.0%)	27 (12.7%)	117 (54.9%)	54 (25.4%)	3.99	0.82
Enhancing employee's effectiveness	0 (0%)	0 (0%)	54 (25.4%)	95 (44.6%)	64 (30.0%)	4.05	0.74
Centralized control of operation	0 (0%)	9 (4.2%)	11 (5.2%)	66 (31.0%)	127 (59.6)	4.46	0.78
Improved decision making	0 (0%)	0 (0%)	31 (14.6%)	75 (35.2%)	107 (50.2%)	4.36	0.72
Support organizational changes	0 (0%)	0 (0%)	38 (17.8%)	79 (37.1%)	96 (45.1%)	4.27	0.75
Quick information response time	0 (0%)	0 (0%)	36 (16.9%)	93 (43.7%)	84 (39.4%)	4.23	0.72
Better Planning	0	0	30	85	98	4.32	0.71

	(0%)	(0%)	(14.1%)	(39.9%)	(46.0%)		
Improved order management/order cycle	0 (0%)	0 (0%)	42 (19.7%)	86 (40.4%)	85 (39.9%)	4.20	0.75
Improved on-time delivery	0 (0%)	13 (6.1%)	41 (19.2%)	85 (39.9%)	74 (34.7%)	4.03	0.89
Improved cash management	0 (0%)	0 (0%)	43 (20.2%)	106 (49.8%)	64 (30.0%)	4.10	0.70
Average mean						**4.20**	

Source: Field Survey, 2021

The survey result shows that all items list of benefits of ERP implementation had a mean of greater than 3. 00 having greater mean value of 4.46 with standard deviation of 0.78 that is less than 1 standard deviation and least mean value of 3.99 with standard deviation of 1.04 which is greater than 1 standard deviation. As standard deviation closer to one indicates close perception of respondents whereas greater than one standard deviation imply respondents' perception were far away from another. So, the respondent perception for the response of Short process cycle time and performance improvement was far away from one another. The result also shows ERP systems implementation certainly offer considerable benefits, the top benefits gained identified by the survey participant as follows: reduce paper work, quality improvement, better resource management, centralized control of operation, improve decision making and better planning.

As per the table 4.3 Centralized control of operation is one of the top benefit of ERP implementation with mean value of 4.46 and standard deviation 0.78. Therefore, it implied that the core operational activities and processes have been controlled centrally, so that it can reduce time cycle and cost even increase productivity. The interview with project manager and team leaders also shown us Centralized control of operation practiced by ERP system has its unique benefits of "Reduction of Operating Cost". They said the company proactively believed that ERP systems automate business processes and it enables process changes, so that ethio telecom has got strategic advantage of Cost leadership from systems by Cycle time reduction, Productivity improvement, quality improvement.

For the question asked about employee work process effectiveness, the respondents believe that the ERP implementation makes the company‟ employees working process effective which is due to fully automated. From the interview dialogue, one good benefits of ERP has expressed that as the different parts of the organization are connected with each other, people have faster access to information and require less time to do their tasks so that it helped to improve the time and resources for decision making. As a result, ERP brought an improved job time and it made employee work process effectiveness.

According to Mafaz (2005), Organizations in developed countries have recognized ERP systems as effective management systems leading to excellent planning and scheduling capability and significant improvements in productivity. Better resource management, information flows control, financial flow control, higher return on investments and greater reduction in material costs are other benefits expected from an ERP system.

Oliver & Romm (2002), by adopting ERP technology organization have benefits that lowers the costs of production, a producer organization may be able to secure a price advantage and thereby achieve a greater market share or reap larger than usual profits in addition improving the performance of existing activities (speed, accuracy, economics) and integration of data and systems to avoid duplication, inconsistency and misinformation.

Those benefits are composed of both tangible and intangible, also operational, strategic and managerial. These results suggest that ERP implementation in ethio telecom have realized variant type of benefits. These results are similar to the relevant literature.

The discussions from the interview about the benefits of ERP implementation in general discussed as; classified the benefits in to operational, strategic and managerial. Cost reduction, productivity improvement and quality improvement are classified under operational categories; better resource management, improved decision making and planning, and performance improvement are classified under managerial.

Table 4.4 Challenges of ERP System Implementation

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	SD
a. People Related Challenges							
Difficulties in changing to new from old systems	13 (6.1%)	43 (20.2%)	48 (22.5%)	91 (42.7%)	18 (8.5%)	3.27	1.07
Unavailability of skilled people	0(0%)	70 (32.9%)	33 (15.5%)	101 (47.4%)	9 (4.2%)	3.23	0.96
Resistance to accept the system	0 (0%)	42 (19.7%)	43 (20.0%)	82 (38.5%)	46 (21.6%)	3.62	1.03
Miscarriage to get user support	0 (0%)	53 (24.9%)	33 (15.5%)	114 (53.5%)	13 (6.1%)	3.41	0.93
Lack of commitment from top leadership	0 (0%)	54 (25.4%)	105 (49.3%)	43 (20.2%)	11 (5.2%)	3.05	0.81
Problem in user's adaptability	11 (5.2%)	64 (30.0%)	43 (20.2%)	64 (30.0%)	31 (14.6%)	3.19	1.17
b. Technology related challenges							
Poor software functionality	30 (14.1%))	54 (25.4%	43 (20.2%)	54 (25.4%)	32 (15.0%)	3.02	1.30
Problem of compatibility with ERP Modules	0(0%)	64 (30.0%)	32 (15.0%)	85 (39.9%)	32 (15.0%)	3.40	1.07
Lack of Process Engineering	0(0%)	44 (20.7%)	76 (35.7%)	72 (33.8%)	21 (9.9%)	3.33	0.91
Lack of flexibility	6 (2.8%)	93 (43.7%)	42 (19.7%)	41 (19.2%)	31 (14.6%)	3.00	1.15
Security and protection of confidential information	0 (0%)	40 (18.8%)	54 (25.4%)	74 (34.7%)	45 (21.1%)	3.58	1.02
Network problem to use and fully benefits from the system.	12 (5.6%)	20 (9.4%)	32 (15.0%)	85 (39.9%)	64 (30.0%)	3.80	1.14
c. Process related challenges							
Unclear strategic direction and vision for the use of ERP	19 (8.9%)	96 4(5.1%)	43 (20.2%)	32 (15.0%)	23 (10.8%)	2.74	1.15
Communication challenge	0 (0%)	54 (25.4%)	31 (14.6%)	98 (46.0%)	30 (14.1%)	3.49	1.02
High costs of implementation	0 (0%)	40 (18.8%)	87 (40.8%)	64 (30.0%)	22 (10.3%)	3.32	0.90
Ineffective communication with others	0 (0%)	65 (30.5%)	97 (45.5%)	31 (14.6%)	20 (9.4%)	3.03	0.91
Organizational culture	5	91	45	64	8	2.90	0.9

affects ERP implementation	(2.3%)	(42.7%)	(21.1%)	(30.0%)	(3.8%)		8
Inadequate Training	20 (9.4%)	32 (15.0%)	21 (9.9%)	97 (45.5%)	43 (20.2%)	3.52	1.23
Poor Reporting Procedures	11 (5.2%)	95 (44.6%)	32 (15.0%)	75 (35.2%)	0 (0%)	2.80	0.99
Inadequate Ongoing Support	0 (0%)	55 (25.8%)	9 (4.2%)	107 (50.2%)	42 (19.7)	3.64	1.07
Average mean						**3.27**	

Source: Field Survey, 2021

Table 4.4 illustrated that, all variables except unclear strategic direction and vision for the use ERP, organizational factor affects ERP implementation and poor reporting procedure have greater than three mean within the interval 3.80 mean value and 1.14 standard deviation to mean value 2.74 and 1.15 standard deviation. The following variables obtain a standard deviation values greater than one implies the respondent perception far away one another. Those variables people related challenges are difficulties in changing to new from old systems, resistance to accept the system, and problem in user's adaptability. Technology related challenges are poor software functionality, problem of compatibility with ERP Modules, lack of flexibility and security and protection of confidential information. Other challenges are unclear strategic direction and vision for the use of ERP, Coordination between functional groups, network problem to use and fully benefits from the system and Inadequate Ongoing Support.

The variables listed on the top includes; network problem to use and fully benefits from the system, inadequate training, coordination between functional group, security and protection of confidential information, resistance to accept the system and miscarriage to get user support. These variables were found from three categories, namely personal, technological and process category.

The least challenges from the survey result are as follows: ineffective communication with other, high cost of implementation, poor software functionality and lack of commitment from top leadership.

BooYoung (2007), stated many engineering, telecom and construction firms know how beneficial ERP systems are, but they still hesitate to adopt these systems due to their high cost and risk. The most known challenges include resistance to change from the staff, lack

of support from the top management, organizational culture and lack of continuous training. This issue also noted by Goeun (2013), ERP implementation has its own challenges like lack of manager commitment, ineffective communications with users, insufficient training of end-users, failure to get user support, lack of effective project management methodology, attempts to build bridges to legacy applications, conflicts between user departments, composition of project team members, Failure to redesign business process and Misunderstanding of change requirements.

As per the above table 4.4 the respondent response about inadequate training indicate mean value of 3.52 and which means poor training is one of the critical challenges of ERP implementation. Training is very critical factor in ERP implementation since ERP system is relatively new and complex. Respondents stressed that sufficient training to users is mandatory. Otherwise, lack of training may lead to failure.

According to Barton (2001), increasing reports point to poor training as a major cause behind failed ERP projects. Not just education of the technical staff, but of the user community who are supposed to actually work with the system. ERP changes the way companies do business but, instead of training everyone in the company on how to do business differently, they are trained on new computer software.

Human skill and attitude is the major factor for successful implementation of any system. In this regard the company under study has challenged by inadequate employee skill in using IT because of lack of training and attitude problem. This lead not only to lose the benefits from the system fully rather it leads to made repetitive human mistake which is more difficult to made corrective action.

From non-human factors the loin share was covered by network problem with mean value 3.87 and this problem limited the company not to use and fully benefits from the system. There is continuous system down and it takes time to solve the problem. The other issued disused is Human resource, finance and supply chain department are highly dependent on information system department and vendors to get support about the system.

As per the above table 4.4 the question on communication challenge is mean value of 3.49 and this indicate that communication like aware employees about the importance of the system for the company, goals and objectives for using ERP system are one of critical

challenges of ERP implementation. According to the result from the collected data and ethio telecom employees of the organization do not have sufficient information about the resources allocated by the company for day to day activities and there is also problem among the staffs about knowing the importance of the ERP system within the company.

According to Ross (1999), Effective communication is a strong foundation of a trustworthy relationship between organizational members. The more users understand each other, the more effective the communication. Insufficient communication of users' needs, goals and aspirations undermine the ERP system.

As per the above table 4.4 inadequate ongoing support has 3.64 mean value and this indicate inadequate ongoing support is one of the top challenges of ERP implementation. Lack of ongoing support in implementing solutions like ERP lead to unnecessary frustrations in work place. Also, it causes delay in operations and ineffective decisions.

According to BooYoung (2007), support for ERP initiatives is important in enhancing the overall success of the software. Therefore, to increase the prospects of having a successful ERP acquisition in which the expectations of individuals, workgroups or departments, and the entire organization are adequately met, top managers must offer their support and commitment for the ERP both at the implementation and post-implementation phases. It may not be sufficient to show support during the implementation phase and adopt a hands-off approach at latter stages in the ERP lifecycle. To ensure greater levels of ERP success, management must continually show support for the software and pay attention to all the affected departments in the organization.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This part of the study tries to summarize and conclude the key findings which rise out of the study and pass possible recommendations as remedies to improve the existing and observable potential challenges.

5.2 Summary of Major Findings

This part of the study tries to recapitulate the key findings which a rise out of the study. The study was intended to investigate the benefits and challenges of ERP implementation in ethio telecom head office.

Concerning the benefits realized by the company, the respondent perceived top benefits as follows: centralized control of operation, better resource management, improved decision making, productivity improvement, quality improvement, quickened information response time, improved cash management, better planning and improved order management.

The least perceived benefits by the participants were, improved organizational performance, improved on time delivery, decrease financial close cycle and enhancing employee's effectiveness.

Lack of full implementation of ERP project prevents the company from realizing the expected operational and managerial benefits in return for possible realization of organizational and strategic benefits.

Related with the potential challenges, difficulties in changing to new from old systems, network problem to use and fully benefit from the system, inadequate training, lack of commitment from top manager, inadequate ongoing support and high costs of implementation were the top perceived challenges, resistance to accept the system, unclear

strategic direction and vision for the use of ERP, miscarriage to get user supports, and organizational culture affect ERP implementation were also least challenges illustrated.

Human factor is one of the big challenges in the implementation process of ERP. Human skill and attitude is the major factor for successful implementation of any system. In this regard the company under study has challenged by inadequate employee skill in using IT because of lack of training and attitude problem. This lead not only to lose the benefits from the system fully rather it leads to made repetitive human mistake which is more difficult to made corrective action.

The collected data shows that there is lack of adequate training delivered to the staffs about ERP because still when there is a problem the company was dependent on vendor. In addition, the vendors were not transferred their knowledge to the staffs at expected level.

From non-human factors the loin share was covered by Network problem. This problem limited the company not to use it and fully benefits from the system. There is continuous system down and it takes much time to solve the problem. Since it is telecom company the organization has huge potential regarding network.

The current ERP system of ethio telecom is not satisfactory. It is not possible to have reliable and smooth intranet connection to perform day to day activities on ERP system. The level of IT usage within the company is also not high as expected. Similarly, system interruption is not fixed instantly and also support from system administrator is not as expected as per the respondent.

Still Human resource, finance and supply chain department are highly dependent on information system department and vendors. This makes works difficult specially when there is system problem and privilege issue the problem is not solved timely.

Even though the company deployed a big IT solution to make the working environment automated, there are areas utilizing the manual working method parallel with the automation. Utilization of a mix-up working methods (manual and automated) is affecting the efficiency of the company due to the fact that manual working methods are a bit time consuming, energy taking, not easily retrieved and so on.

5.3 Conclusions

The main purpose of this study is identifying potential benefits and challenges of ERP implementation. This research conducted in Ethiopian company namely ethio telecom. The results found were similar to the relevant study.

There are some functional areas that are utilizing both the manual as well as system based working methods. On top of this, the existence of both working methods is highly affecting the efficiency of the company. This may be because the time consuming and energy taking nature of the manual working methods.

The company efficiency has been hampered due to not utilizing the entire feature of the system even if the system license has been fully procured. This means that, the company is not able to utilize all the features of the system due to different factors, but the major reason for this underutilization could be lack of expertise on the area.

Concerning the benefits realized by the company, the top benefits are as follows: cycle time reduction, centralized control of operation, better resource management, improved decision making, productivity improvement, quality improvement, quickened information response time, improved cash management, reduced paper work, support organizational change, improved order management/ order cycle and better planning.

Related with the potential challenges, difficulties in changing to new from old systems, network problem, lack of commitment from top management, resistance to accept the system. Miscarriage to get user support, inadequate training, inadequate ongoing Support and problem of compatibility with ERP module were the top perceived challenges and organizational culture affected ERP implementation, high cost of implementation, unclear strategic direction and vision for the use of ERP, poor reporting procedure, ineffective communication with other, lack of flexibility, problem in user's adaptability were also least challenges.

The above finding leads to the following conclusion. Implementing and having a

functional ERP system is not the end of the story, there are varies activates required to remain successful that time the company experience many effective challenges and important benefits, identify these challenges and benefits is one way to have successful ERP project in a desired level.

5.4 Limitation of the study

The study has focused only on ethio telecom HR, finance and supply chain department which implement ERP module for their activities and limited in head office. The researcher believes that the findings of this study were more productive if it has been conducted on all division of the company and country wide branch of the company. However, due to time and financial constraints, it was out of the reach of the researcher to incorporate all in this study. Unavailability of secondary data and related research work on the current topic are the limitations of this study. Response bias from respondents was another limitation of the study since the information provided by the respondents is from their stored memory. However, the researcher has tried to minimize this bias by undertaking in-depth interview with ERP super users and system support providers who have direct involvement in the implementation project.

5.5 Recommendations

Ethio Telecom encountered some drawbacks in applying ERP implementation. So as to alleviate these drawbacks, the following recommendations are forwarded.

One of the main challenges in ERP implementation is non-human factor like network problems, so the company should give high focus and make improvements. Because this is one of the big hindrance that limits the company not fully use the system at expected level. In addition, the company should deploy adequate amount of resource to overcome continuous system down.

Since the major purpose of Enterprise resource planning (ERP) system implementation is to reinforce the efforts and performance of employees towards the achievement of organizations goals and objectives, ethio telecom has to do a lot by delivering the required training programs for both end-user as well as super users to bring the required level of

skills on the system. To do so, a competency assessment has to be implemented to examine the required skill level and the actual system functionality, so that the right training for the right target group can be delivered for the better utilization of the system. Moreover, super users of the company have to be properly identified and trained in a manner that can fully handle the post implementation support as a result the extended dependency of the company can be minimized, and which lead to a high cost saving apart from the other benefits. And as indicated by O'Leary (2000: 41), training is not something that should be conducted only before or after the implementation but rather it has to be present in each part of the ERP life cycle.

Human resource, finance and supply chain department are dependent on the vendors and IS (information system department) support and there is delay in solving the problems especially when there is system down and privilege issue, so the company should assign dedicated specialties to each division to get on time and urgent support.

To realize all the benefits expected from the system, ethio telecom has to exert all its effort to utilize all the features of the system from the already procured license, so that the intervention of manual working methods can be highly minimized and efficiency of employees and company in general can be enhanced accordingly.

Top management support has been found to be important factor of implementing successfully the ERP system. Top management in ethio telecom have set official policies and taken a self-motivated role in leading the ERP implementation. They have been committed to allocate all the required resources (time, budget and money) for ERP system implementation, continually follow, monitor and take corrective action when the problems occur and they should strengthen supporting the practice. Therefore, top management was greatly supporting its organization in ERP implementation processes by maintaining a financial plan and delegating implementation authority.

Effective communication with employees is important to build awareness about the system and its effect on performance. Awareness was created to employees about the

objectives of implementing the system and its impact on performance through mail, discussion, meeting and training.

References

Ahmed S. (2015). *Critical Success Factors in Enterprise Resource Planning (ERP) System Implementation:* An Exploratory Study in Oman.

Albana, B. Q. & Enver, K. (2015). *The Role of Human Resource in gaining competitive Advantage*, 47-61

Almahdi, M. I. (2015). *What organization should know about ERP system*?

Ashush, K. D. & Om, Prakash. (20011). *A study of issue affecting ERP implementation in SMEs. Journal of Arts, Science & Commerce*. Vol II.

Barton, P. (2001).*ERP factors Affecting success and failure*.

Best, W.J & Kahn, V.G. (1999). *Research in Education*, 7thed. Prentice Hall of India Private Limited.

Bingi,P., Sharama,M.K. & Godla, J. G. (2006) *Critical Issues Affecting an ERP implementation.*

Boo, Y. C. (2007). *An Analysis of Success and Failure Factor for ERP System in Engineering and Construction Firms*.

Chao Peng, Guo & Miguel. *"Identification and Assessment of risks associated with ERP Post- Implementation in China". Journal of Enterprise Information Management* 22.5 (2009): 587-614.

Chen, H. H., Chen, S. C. & Tsai, L. A. (2009). *Study of Successful ERP from the Organization Fit perspective.*

Davenport, T. (1998). *Putting the Enterprise into the Enterprise System. Harvard Business Review, 76(4), 121-131.*

Eldabi, T. & Naseer, A. (2016). *Challenges and influential factors in ERP adoption and Implementation*, 2-15.

Ethio Telecom annual magazine (2017).

Forch, K.A., Kieschnick, E. k., Aldridge, A. A. & Karen,J. S.(2007). *Implementing Enterprise Resource planning for Strategic Competitive Advantage*, 425-430. Vol VIII.

Getachew, Engidayehu. ”Assessment of Enterprise Resources Planning (ERP) Implementation: The case of Ethio Telecom”. Addis Ababa University Department of Public Administration and Development Management June 2014.

George, D., & Mallery, P. (2003). *SPSS for Windows step by step*: *A simple guide and reference* (4th ed., Vol. 11.0 update). Boston: Allyn & Bacon.

Goeun, Seo. (2013). *Challenges in Implementing Enterprise Resource Planning (ERP) system in large organization*.

Haim, M. (2000) *ERP Overview*. Stanford University, Stanford, CA

Heerwagen, J. (2016) *the Changing Nature of Organizations, Work and Workplace.*

Henry S., (2002) *Basic Principles for ERP implementation*. 4th Ed. New York: Homeland International limited.

Ibrahim, A. (2010). *What Organizations Should Know About Enterprise Resource Planning (ERP) System.* European, Mediterranean and Middle Eastern Conference on Information Systems 2010 (EMCIS2010), (pp. 1-16). Abu Dhabi.

Jalil, Fatima, Abdellah Zaouia, & Rachid EL. *"The Impact of the Implementation of the ERP on End-User Satisfaction Case of Moroccan Companies". International Journal of Advanced Computer Science and Applications* 7.1 (2016).

Joseph, A., Gliem & Rosemary, R. Gliem. (October 8-10, 2003). *Calculating, interpreting, and reporting Cronbach’s Alpha Reliability Coefficient for Likert-Type Scales.*

Kamhawi, Emad M. *"Enterprise Resource- Planning Systems Adoption in Bahrain: Motives, benefits, and Barriers". Journal of Enterprise Information Management* 21.3 (2008): 310-334.

Kothari, C. R. (2004). *Research Methodology Methods and Techniques*. (2nd edition). India: New Age International Publishers.

Li Fang & Sylvia Patrecia (2005), *Critical Success factor in ERP*, Jönköping International Business School.

Linda, K. L. (2003). *Developing a Successful Implementation Plan for ERP: Issues and Challenges*. Longwood University .IACIS, 223-228.

Lineke, S. RC. (2014). *A guide to ERP, benefits, Implementation and Trends*.

Louis C, Lawrence M, & Keith M., (2005). *Research Methods in Education*, 5thed.

Mafaz, M. (2005).*Strengths, Weaknesses, Benefits and Challenges for Organizational Change in relation to implementing an ERP in Sri Lankan Organizations.*

Martin Christopher (2011). *Logistics and Supply Chain Management*. Pearson education limited. Malhotra, N.K. (2007). *Marketing Research*: An Applied Orientation, 5th ed. PHI, New Delhi.

Mohammad A. Rashid (2002). *The Evolution of ERP Systems: A Historical Perspective*

Murphy, Kenneth E & Steven John Simon. *"Intangible Benefits Valuation in ERP Projects". Information Systems Journal 12.4 (2002):* 301-320.

Nafjan, Al.A. & Mudimign, A.S. (2005) *the impact of challenge management in ERP system.*

Nic, T., Rosnah, I. & Umi, K. Y. (2013) *ERP misfit-reduction strategies*: *When are system Modification and organizational adaptation appropriate?*

Nwankpa, Joseph K. *"ERP System Usage and Benefits: A Model of Antecedents and Outcomes" Computers in Human Behavior 45 (2015):* 335-344.

O'Leary D. E. (2000): *Enterprise recourse planning systems: systems, life cycle, electronic Commerce and risk*. Cambridge University Press.

Oliver, O. & Romm, C. T. (2002). *ERP Systems in Universities: Rationale Advanced for adoption.*

Priya, Sisodia. (2016). *Inhibiting the ERP Software market. ERP Software Global Market.*

Rahnavarda, F. & Bozorgkhou, N. (2014). *Key factors in the successful implementation of Enterprise resource planning system*. Management Science Letters, 747-752.

Ramdas, S.W &Amar, R.M. (2014).Study the Importance of SWOT Analysis on ERP Implementation. *International Journal of Management and Social Sciences Research.*

Rashid, M. A., Hossain, H. L. & Patrick, J. D. (2002). *The Evolution of ERP Systems*: *A Historical Perspective*. Idea group publishing, 1-16.

Reichel, M., & Ramey, M. A. (Eds.). (1987). *Conceptual frameworks for bibliographic education: Theory to Practice. Littleton Colorado.*

Robson Colin, (2002*). Real World Research,* 2nd edition. USA: Blackwell Publishing. Ross J. W. (1999): *Surprising facts about implementing ERP*.

Saatçıoğlu, Ömür Y. "*What Determines User Satisfaction in ERP Projects: Benefits, challenges or Risks?" Journal of Enterprise Information Management* 22.6 (2009).

Sakaran, U. (2003). *Research Methods for Business*. John Wiley and Sons, Inc.

Salmela, H. & Koskivara, E. (2013). *ERP implementation in SMES views on critical Success factors.*

Sanchita, C. B. (2013). *A Study of Issues and Challenges of Implementation of information Technology in HRM.*

Singla, A.R. (2008). *Impact of ERP System on Small and Mid-Sized Public Sector enterprise.*

Shanab,A. E., Shehab, A.R. & Khairallah, M. (2015) *Critical Success Factors for ERP Implementation*: *The Case of Jordan International Arab Journal of e-Technology*.

Su, Y. & Yang, C. (2010). *Why are enterprise resources planning systems indispensable to supply chain management? European Journal of Operational Research,* 203(1), pp. 81– 94.

Tenkorang, R. A. &Helo,P. (2011). *Enterprise Resource Planning a review literature Report. Proceedings of the World Congress on Engineering and Computer Science.*

Tsyen,N. Idrus, R.&Kalsom.Y (2016) *ERP misfit-reduction strategies: When are system Modification and organizational adaptation appropriate*.

Yamane, Taro. (1967). *Statistics: An Introductory Analysis*, 2nd Edition.

Yesegat, W. A. (2009). *Value Added Tax in Ethiopia: A Study of Operating Costs and compliance.*

APPENDIX A

St. Mary's University

MBA in Project Management

Questionnaire to be filled by employees of ethio telecom

Dear Participant;

My name is Seble Hailu. I am an MA student in project management at St. Mary's University. As part and parcel of my MA in project management, I am conducting research entitled '**Assessment of The Benefits and Challenges of Enterprise Resource Planning (ERP) Implementation In ethio telecom'**

The purpose of this questionnaire is to gather data on benefits and challenges of Enterprise Resource Planning (ERP)implementation in ethio telecom. The study is purely for academic purpose and thus not affects you in any case. So, your genuine, frank and timely response is vital for successfulness of the study. Therefore, I kindly request you to participate in this study by patiently completing the questionnaires. And, I hereby assure you that all the information will remain confidential and do not include your name in the questionnaires. The results of this research will contribute greatly in assessing practices and challenges of Enterprise Resource Planning (ERP) implementation in ethio telecom. Therefore, it is your genuine response which drives to effective analysis and conclusion then fruitful recommendations.

Contact Address If you have any query, please do not hesitate to contact me and I am available as per your convenience at (Mobile: 0911-24-52-94 or e-mail: seble.hailu1394@gmail.com).

Instruction

- Please tick (√) in the space provide that best reflects your answer for each question.
- In order to ensure confidentiality do not put down your name on the questioner.

Part I: Demographic profile of respondent

1.1.Sex

☐ Male ☐ Female

1.2.Age Group

☐ 18 – 25 ☐ 26 – 30 ☐ 31 – 40 ☐ 41 and above

1.3.Educational status

☐ Diploma ☐ BA/BSC ☐ Masters ☐ above

Other please specifay_____

1.4.Your service year

☐ ≤ 5 ☐ 6 – 10 ☐ 11 – 15 ☐ 16 – 20 ☐ ≥ 21

1.5. Which department / devision are you working in?

☐ Human resource ☐ Finance ☐ Supply chain

1.6.Your position in the organization

☐ Staff ☐ Supervisor ☐ Expert ☐ Manager

Part II: Respondents opinion investigation about the study area

Please read each statements in the first column carefully and show the extent of your agreement on the statements by putting (√) in the next column using the following rating scale (Likert Scale). The rates are - 1 = Strongly Disagree, 2 = Disagree; 3 = Uncertain, 4 = Agree, 5 = Strongly Agree

A. **Benefit of ERP implementation**

Statments	**Strongly Disagree**	**Disagree**	**Nutral**	**Agree**	**Strongly Agree**
Reduce organizational cost					
Reduce paper work					
Short process cycle time					
Increase organizational performance					
Productivity improvement					
Quality improvement					
Performance improvement					
Better resource management					
Decreased financial close cycle					
Enhancing Employees effectiveness					
Centralized control of operation					
Improved decision making					
Support organizational changes					
Quick information response time					
Better Planning					

Improved order management/order cycle					
Improved on-time delivery					
Improved cash management					

B. **The challenges of ERP implementation**

Statements	Strongly Disagree	Disagree	Nutral	Agree	Strongly Agree
a. People Related Challenges					
Difficulties in changing to new from old systems					
Unavailability of skilled people					
Resistance to accept the system					
Miscarriage to get user support					
Lack of commitment from top leadership					
Problem in user's adaptability					
b. Technology related challenges					
Poor software functionality					
Problem of compatibility with ERP Modules					
Lack of process engineering					
Lack of flexibility					
Security and protection of confidential information					
Network problem to use and fully benefits from the system.					
c. Process related challenges					
Unclear strategic direction and vision for the use of ERP					
Coordination between functional					

groups					
High costs of implementation					
Ineffective communication with others					
Organizational culture affects ERP implementation					
Inadequate Training					
Poor Reporting Procedures					
Inadequate Ongoing Support					

I sincerely appreciate your commitment and cooperation. Please check to make sure that you have not skipped any questions!

APPENDIX B
Semi -Structured Interview Questions

1. What is the major benefit of implementing ERP in ethio telecom?
2. What does the implementation practice of ERP look like in ethio telecom?
3. Are there any challenges you faced while implementing ERP?

Finally, I'd like to say thank you a lot for your unreserved co-operation cordially.