ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

ASSESSMENT OF SUCCESS FACTORS OF ENTERPRISE RESOURCE PLANNING SYSTEM: IN THE CASE OF ETHIO TELECOM

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DEMISACHEW ZEWDU WELDMESKEL

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION (GENERAL MBA)

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APPROVED BY BOARD OF EXAMINERS

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Internal Examiner	Signature

DECLARATION

I, the undersigned, declared that this thesis is my original work, prepared under the guidance of Tiruneh Legesse (Asst. Prof.). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

_____ _____

Name Signature

St. Mary's University, Addis Ababa June 2019

ENDORSEMENT

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

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Name	Signature
St. Mary's University, Addis Ababa	June 2019

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Acronyms and Abbreviation

ERP	Enterprise Resource Planning
ETC	Ethiopian Telecommunication Corporation
GTP	Growth and Transformation Plan
MNC	Multinational Corporation
EDI	Electronic Data Interchange
HR	Human Resource
CRM	Customer Relationship Management
IDC	Indirect Channel
DC	Direct Channel
FAN	Fixed Access Network
O&M	Operation and Management
MRP	Material Requirement Planning
MRP II	Manufacturing Resource Planning
APS	Advanced Planning and Scheduling
SCM	Supply Chain Management
e-TOM	Enhanced Telecom Operating Map
PCMM	People Capability Maturity Model

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Abstract

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. This study was conducted using Survey Research Design. The target population was used to assess the success factors of ERP implementation in selected section of six ethio telecom zone offices in Addis Ababa. From the total of 431 target population, this research selected 207 samples and used stratified random method to get the perspective of the system users. Data was collected through the use of questionnaires administered in the field to the sampled respondents. The collected data was analyzed using mainly by computer such as SPSS (Statistical Package for the Social Sciences) version 23 and the findings were presented using tables. The study concluded that the deployed ERP system doesn't make the working process fully automated, lack of appropriate training for all system users was identified, lack appropriate customization process in relation to the companies as well as countries regulatory framework were also identified, In addition, IT infrastructure also a major challenge for the company. The researcher has recommended that the company should re-consider its system with regard to full utilization of the system and out the manual work, improving the IT infrastructure, equipping all user staff with consistent training.

***Key Words**: ERP, IT Infrastructure, User Training, User Support and Communication*

CHAPTER ONE
INTRODUCTION

This chapter gives some highlight about the background of the study, statement of the problem, research topic, discussion on research problem, research questions, significance of the study, general and specific objectives for carrying out the study. In addition, the scope of the study also discussed.

1.1. Background of the Study

The amount of information in organization is heavily increasing and it has become vitally important to efficiently manage and share information inside the Organization. Companies have to swift in adopting new technology in order to remain competitive in a continuous developing business environment. In other word, more than ever before Organization now a day they are continuously implementing technologies that improve their backward working system, because in globalization world working hard and implementing new technology play a vital role. organizations be concerned with the success and market penetration of their current product mix, but they must also be concerned with their long run capability to develop and incorporate in a timely manner the most appropriate technical advancements into future product offerings. Allen and Kern (2001).

In our globalized world sitting without any change and improvement lead organization their existence in question. Now-a-days with the quickening and intensifying flows of information and communication, organization can now access more information from all over the world so improving organizational performance only from internal perspective have impact because organization must observe what is happening in the globe to be more effective and efficient organization.

In order to eliminate manual work and to bring it to systematized ways of working, ERP is one of the systems that have many functions. Enterprise Resource Planning is a software solution that integrates business functions and data into a single system to be shared within a company so implementing this system have the opportunity of reduced cost and high system quality plus can support managers to get real and on-time data from the system.

Common goals that implement solutions of ERP encompass enhanced and empowerment efficiencies for final user since they process the transactions of business through the ability of ERP solution to facilitate automation, end-to-end integration, better access to important information of business processes. ERP system is expected to improve both backbone and front-end functions simultaneously (Mohammad A. et al., 2002:18). This means that the expectation of achieving all-round cost savings and service improvements is very much dependent on how good the chosen ERP system fits to the organizational functionalities and how well the tailoring and configuration process of the system matched with the business culture, strategy and structure of the organization.

On the other hand, due to changes in business processes across an organization, there can be resistance to adopting the ERP system. ERP connects and integrates all business functions within the organization. Therefore, it is critical that management staff be committed, and particularly that they equip employees who are using business functions influenced by ERP with clear channels of communication. Lack of end user training increases risks by creating confusion and inaccuracy, thereby decreasing user satisfaction and the credibility of the system. Goeun (2013).

Effective communications, effective project management, training and implementation team are essential throughout an ERP project in order to bind the various activities together (Ibrahim, 2010). Strong communication within the entire organization during the implementation process increases success for ERP implementation. It allows the organization's stakeholders to benefit of the project as well as to share the progress of the project. Due to the complexity of the integrated ERP system, end user training is essential for a robust understanding of how the system works and how to use it. Consequently, appropriate end user education and training will maximize ERP benefits and increase user satisfaction. Effective project management is critical for the successful ERP implementation, Delgado (2006).

Telecom industry becomes tremendously changed time to time with vast and rapid scope. Expectation of customers of this industry also diverges accordingly. Telecommunication sector has also an opportunity to generate huge amount of revenue. The impact of telecom industry has significant role on social, cultural and economic sector in addition to the governmental and private sectors.

Ethio Telecom was established on December 2010 by the decision of the Government of Federal Democratic Republic of Ethiopia to transform the previous traditionally operating corporation (ETC) with a vision to be a world class telecom operator. Ethio provides different kinds of products and services all over the country and act as a sole service provider. In order to achieve the government goal mainly focus on GTP 1 as well as the company strategic plan "being world class telecom operator" which ultimately repairs, develop and maintain modern information and communication network infrastructure and develop & maintain better organizational structure, capabilities and readiness.

Ethio telecom has a vision of being a world class company. In order to enhance the achievement of this vision, the company decided to implement different technologies and systems that lead the company one step to a better position. To do this ethio telecom implemented more sophisticated ERP tool so that its employees' activities are shifted from routine manual tasks to more systematized way.

This tool has an advantage of automating the current manual processes and can support both the company and the management to get better, real, and adequate on time information. By this they can made best decision that support the company in many aspects, even if there is gap on the implementation and practice of this system from both the staffs as well as from the management side.

As Goeun (2013) cited, as a result of its benefits, ERP has become the backbone of business intelligence for organizations by giving managers an integrated view of business processes, Parr& Shanks (2000). ERP is designed to adapt to new business demands easily. The continuous technological advancement and the increasing complexity of ERP require companies to regularly upgrade their systems. Most ERP vendors provide an opportunity to update procedures and align with perceived best practices to meet changing business needs more quickly (Harrison, 2004). The benefit which is expected from ERP system is realized only when it is implemented considering all the pre and post implementation activities. Planning for ERP systems and their implementations requires an integrated approach to meet the requirements of various functional areas.

The knowledge of success and failure is important because it helps the organization and the country to know the key factors behind its success and failure. It gives them a good lesson in any

future initiatives of same kind that might come. So, the aim of this research is to fill the above-mentioned gap for academicians, researchers and practitioners. Since telecom companies are highly dependent on technologies ethio telecom is not new to implement new technology-based system. The researcher's interest and motive are to assess the success factors of implementing, to show the potential opportunity and challenges and finally to recommend possible solutions.

1.2. Statement of the Problem

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. Whybark (2000). 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. This is especially true for multinational corporations (MNC), in which global integration could result in better communications and coordination around the world. The global sourcing and distribution of parts and services could also provide appropriate benchmarks for operations around the world. Third, the sharing of a centralized database provides business managers with accurate and up-to-date information to make well-informed business decisions. Further, it reduces data redundancy while improving data integrity at the same time. Fourth, functional integration will consolidate all sorts of data, such as financial, manufacturing, and sales, to take advantage of bulk discounts. ERP is especially important for companies who are "intimately connected" to their vendors and customers, and who used electronic data interchange (EDI) to process sales transactions electronically. Therefore, the implementation of ERP is exceptionally beneficial to businesses such as manufacturing plants that mass-produce products with little changes. Brady, Joseph, Monk, and Wagner (2001). Nevertheless, the revolutionary and innovative ERP software system quickly expands into other business areas such as finance and retailing. ERP also provides companies with a competitive advantage over their competitors.

It stands as characteristics or favorable situations which can bring a competitive advantage in the market. The organization that always looking for the new opportunities to achieve the objective will never face the failure in market. Similarly, the organization who planning for ERP implementation need to find the opportunities in the market for the ERP implemented technology adopted organization. The next opportunities can be possible by ERP in organization is, it can

create the one of the consultant division in the market for the ERP implementation for other non-ERP implemented organization. With the help of ERP, we can have the idea about how and what data flowing among the different processing activities in organization, which keeps top level management updated in the regards of organizational information. The ERP also gives the better understanding of the current organizational workflow and fund-flow which help the organization to change its tactical decisions by creating new strategies for the improvements. (Dr Ramdas and Amar 2014)

In addition to the above mentioned points implementing ERP system have its own opportunity for the company like it create favorable condition for the company to implement other systems, the staffs have known how to use modern system so it cannot be headache for any organization to implement new system and the organization have more modernized staff who is capable of using modern system.

Despite the significant benefits and opportunities that ERP software packages provide in managing and integrating cross-functional business processes there are several difficulties and barriers that relate to such an implementation. Implementing an ERP system is a major project requiring a significant level of resources, commitment and changes throughout the organization. Often the ERP implementation project is the single biggest project that an organization has ever launched. More than half of ERP projects have been judged to be unsuccessful or do not achieve their expectations, (Nic and Rosnah 2016)

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, incompatible business processes, project mismanagement, and top management commitment.

Due to limited ERP knowledge, capability and poor project management skills, none of the companies' project managers could exercise effective project management of ERP implementation. They agreed that a failure to plan, lead, manage and monitor the project was a core factor that resulted in their implementation failure, because the ERP system was complex, and project teams were required to collaborate with top management, different departments, users and consultants during implementation process. The ERP project was considered by the project

managers to be challenging and demanding, as it involved managing systems, people (project team, users and external consultant) as well as re-designing business processes. They have to provide expertise concerning project planning, ERP systems and BPR during ERP implementation (Brown and Vessey, 2003).

According to Goeun (2013), top ten risk factors of ERP; 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, Misunderstanding of change requirements

Staffs, Supervisors and section managers are complaining on the smooth functionality of the ERP system at their respective places and availability of conducive environment to access the system whenever needed and staffs have high complained about the delay of payments processes, delay of inventory transfer from one warehouse to other, sometimes employees are expected to work manually and frequent need of support from back office. This affects the day to day operation of the company. In addition to this there is no equal understanding and using ERP system within the employees. Inefficiency, lack and long process to get support from back office technical support is also another bottleneck of using ERP system. In addition, during system down the department staffs specially like Human Resource and Finance back to their manual work which is more time taking. Due to this when the system recovers the staffs are forced to insert the data they worked manually when there is system down which creates high work burden for the staffs. Plus, during system down when top management wants data they did not get on time and real data. As reported on continuous ERP evaluation reports the other challenge the company facing after implementing ERP is that lack of adequate support and knowledge transfer from vendors' side. This issue also be one of the big hindrances for the organization. In addition to that, after implementing the Project of Oracle ERP in HR department, the company is recently implemented the system to other departments and have plan to integrate BSC evaluation system to this system so the company has to learn from the strengths and weaknesses they have and to know clearly the real benefits they enjoyed and the potential benefits they haven't figured out yet plus they have to know the problem they faced before and have to take corrective action for the upcoming other.

1.3. Research Questions

From the above problem, the study seeks to answer the following specific research questions;

- What are the external success factors of ERP system implementation?
- What are the internal success factors of ERP system implementation?
- What are the opportunities of implementing ERP system?
- What are the threats of implementing ERP system?
- What are the benefits of implementing ERP system?

1.4. Objective of the Study

1.4.1. General Objective

The general objective of the research is to assess the success factors ERP system implementing in ethio-telecom and to recommend possible solutions for the gap.

1.4.2. Specific Objective

The specific objectives of the study that emanate from the general objective are as under:

- ✓ To identify the external success factors of ERP system implementing.
- ✓ To identify the internal success factors of ERP system implementing.
- ✓ To identify opportunities of implementing ERP system.
- ✓ To identify threats of implementing ERP system.
- ✓ To establish the benefits ethio telecom will get from using the ERP system.

1.5. Significance of the Study

This research paper has importance to ethio telecom as a reflection to see the effective implementation and use of ERP. In general, the company will be benefited since employees gave their opinion and suggestion about the practice of ERP which will be input for corrective actions to be done. This research study might also be helpful as a base to conduct in depth assessment on ERP implementation in ET as a whole. In general, the finding and result of this research is communicated to ethio telecom as an important input in the area so that they will able to evaluate

their system utilization practices in related to ERP implementation and identify focus area and take necessary action. Moreover, the findings also serve as input for other companies that need to implement ERP system or already implemented the system.

Furthermore, the general aim of this research is to provide pertinent data that can help both the company, ethio telecom, and the employees to know their own weakness and strength towards the implementation of the ERP system. In addition to the above listed aim this paper has the following specific aim

- To inform key decision makers in the company about the problem the organization faced concerning ERP.
- Both the company and the employees to know the system and its practice in the company.
- Other companies who implemented this system or those companies who have a plan to implement this can get benefit from this paper.
- It will be as an input to other researcher for further investigation.

1.6. Scope of the Study

The study was focused to investigate enterprise resource planning system utilization on ethio telecom based on the implemented ERP system. Ethio telecom has six zones, seventeen regions and corporate level, while due to time, geographical location and financial constraint the researcher focus only on six of Zonal offices located in Addis Ababa. Due to the nature of the company there are vast numbers of internal system users. According to Neuman (2007), smaller samples are sufficient when less accuracy acceptable when the population is homogeneous or when only a few variables are examined at a time. Having this, the study focused on the six zones. Ethio telecom zones and regions are composed of ten major departments and one Zone operational director namely Finance, IDC, DC, Sourcing and Logistics, Fleet and Facility, HR, FAN, O&M, Security and Enterprise. All these departments are common in all zone and regions. The researcher also focuses the major user of ERP departments of the six zones, Human resource, Finance, Sourcing and Facility.

The other scope of this research is that ethio telecom implemented various systems that directly or indirectly related with ERP activities like CRM and Voucher Management system, but the researcher focuses only on ERP system due to time constraint and reduce complexity of the

research that affect the research result. But, to minimize or avoid any effect of other system on this finding, the researcher tried to clear the research question and observation area.

1.7. Organization of the Study

This paper consists of five chapters, which include the following:

The first chapter stands for introduction of the study which consists of background of the study, statement of the problem, study questions, objectives of the study, Scope of the study, and significance of the study, limitation and organization of the study. Chapter two contains different literatures both on the area which discusses various theories and concepts on ERP system, Implementation and related empirical reviews. Chapter three deals with the research methodology and design, contains research design, data collection, Sample design and size, data presentation and analysis, reliability and validity. Then, chapter four presents data presentation and analysis. And finally, the fifth chapter tells the summary, conclusion and recommendation.

CHAPTER TWO
LITERATURE REVIEW

Introduction

This chapter presents the review of related literatures and imperial facts. It includes the conceptual understanding of what ERP mean, and the benefits to be obtained through ERP implementation, the historical background of the system and its related evolutional stags, common ERP platforms, characteristics generally attributed to ERP systems and ERP implementation success and failure factors will be dealt under literature review part. The reason behind ethio telecom goes for ERP implementation has also been assessed under the Imperial review part.

2.1. Theoretical Literature

2.1.1 The Meaning of ERP

Monk and Wagner, (2013:2) defined Enterprise Resource Planning (ERP) systems are core software programs used by companies to integrate and coordinate information in every area of the business. ERP (pronounced "*E-R-P*") programs help organizations manage company-wide business processes, using a common data base and shared management reporting tools. A business process is a collection of activities that takes one or more kinds of input and creates an output, such as a report or forecast that is of value to the customer. ERP software supports the efficient operation of business processes by integrating tasks related to sales, marketing, manufacturing, logistics, accounting, and staffing throughout a business. In addition to this cross-functional integration, which is at the heart of an ERP system, companies connect their ERP systems, using various methods, to coordinate business processes.

An Enterprise resource planning system is a fully integrated business management system covering functional areas of an enterprise like Logistics, Production, Finance, Accounting and Human Resources. It organizes and integrates operation processes and information flows to make optimum use of resources such as men, material, money and machine. An ERP system is a packaged business software system that allows a company to automate and integrate the majority of its business processes and share common data and practices across the entire Enterprise. ERP also accesses information in a real-time environment. Many companies use ERP software to

integrate the enterprise-wide information and process for example their financial, human resources, manufacturing, logistics, sales and marketing functions. ERP is designed mainly to provide a total, integrated company's resource to manage the business process efficiently and effectively (Seddon, Shanks & Sylvia 2012).

Enterprise resources' planning is software that is used to in different organization regardless of the size of the business. Hence this system can be applied in small, medium and large-scale business organizations for a better management of the operational activities. Such software can deliver consistent data across all business functions in real time. Real time refers to data and processes that are always current. An ERP is both a process and a software suite that supports the integration of business functions, management of operations, and the allocation of organizational assets efficiently and effectively (Lipaj & Davidaviciene, 2013; Mouakket, 2012). Implemented correctly, an ERP enables the planning and managing of corporate resources in a profitable manner (Hwang, 2011; Tsai, Lee, Shen, & Lin, 2012). An ERP also enables the integration of processes and information to support the organization by allowing management to have sufficient data for analysis. An ERP provides a single IT architecture that presents an organization-wide view. (Hwang, 2011).

2.1.2. Benefits of ERP

While saving organizations time by interpreting and sending data for them, ERP Systems also provide many benefits. ERP systems works to arrange business processes across departments into one information system. The great benefits of ERP are improved arrangement across working departments and increased performance in doing business (Fillinovich, 2011). The direct benefit from enabling ERP systems is that organizations "can expect is reduced operating costs, such as lower inventory control cost, lower production costs, lower marketing costs and lower help desk support costs" (Fillinovich, 2011). The arrangement and execution of ERP Systems is also a faster route than it would be using other software. This is because the hardware and software needed to run the ERP can be installed in both at the hosted site as well as the site of the customer (Fillinovich, 2011). The ability of users being able to log on to the ERP system from any terminal also contributes to the flexibility of the system (Pandit, 2010).

According to Jiang, C. (2010), with a centralized database and built in data analysis capabilities, ERP systems provide informational benefits to management decision making. As ERP systems automate business processes and enable process changes, an organization may expect ERP systems to offer strategic advantage through Cost leadership by Cycle time reduction, Productivity improvement, Quality improvement, Customer services improvement. 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. This helps to improve the time and resources for decision-making. As all the departments and the functions in the organization are integrated and linked to one single database, data needs to be entered only once into the system. It can then, be accessed by different departments according to their needs. For example, before taking an order from a customer, the sales representative can have access to information regarding availability of inventory, credit rating of the customer, etc

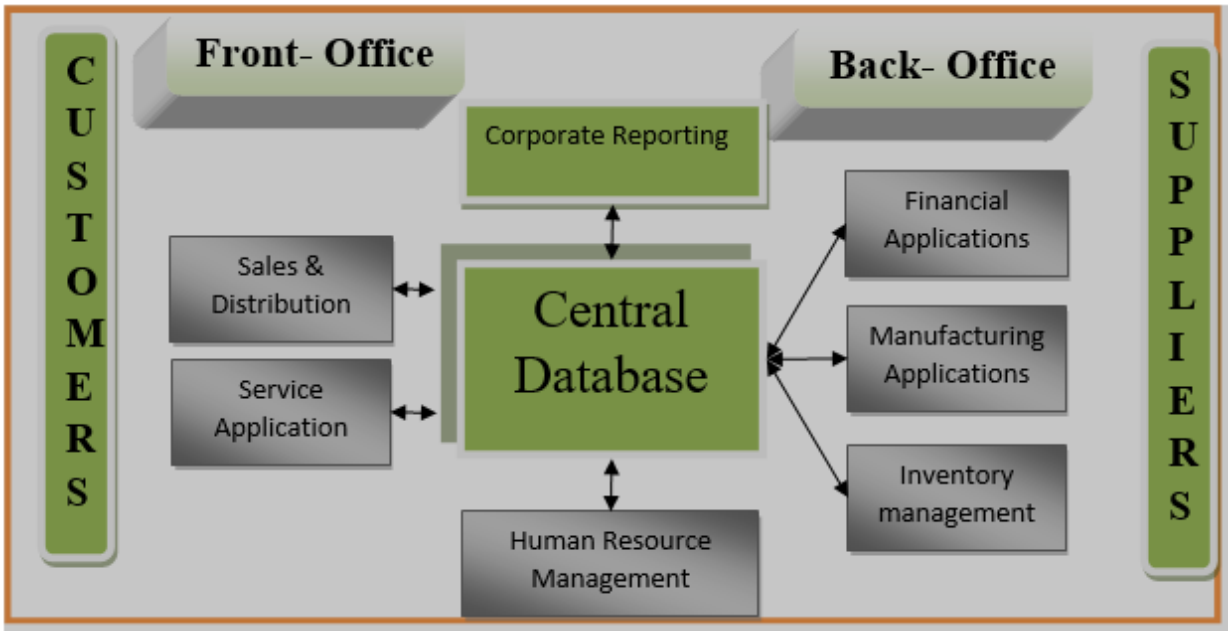
ERP Systems are already developed to suit the general businesses. But as every company has a slightly different way of operating, only minor changes may be needed to customize the system to suit the company's particular business requirements. Once the information is entered into the single database, everyone in the organization has access to the information and sees the same computer screen. In the paper-based system, the order moved from one office to another office around the organization, and often caused delays, errors in processing due to repeated entries by the different department or got lost. With the ERP system, the order process moves quickly through the organization. This helps to get the orders to the customers faster and there is no in-basket time waiting time involved (Bingi, Sharma, and Godla, 2009).

2.1.3. Evolution of ERP

Rashid (2002,4) indicate in their books Enterprise Resource Planning-Global Opportunities & Challenges Starting in the late 1980s and the beginning of the 1990s new software systems known in the industry as Enterprise Resource Planning (ERP) systems have surfaced in the market targeting mainly large complex business organizations. These complex, expensive, powerful, proprietary systems are off-the-shelf solutions requiring consultants to tailor and implement them based on the company's requirements. In many cases they force companies to reengineer their business processes to accommodate the logic of the software modules for streamlining data flow throughout the organization. These software solutions, unlike the old traditional in-house designed company-specific systems, are integrated multi-module commercial packages suitable for tailoring and adding "add-ons" as and when required. (ibid, 2002:39)

As explained by Mohammad A. (2002:4), the evolution of ERP systems closely followed the spectacular developments in the field of computer hardware and software systems. During the 1960s most organizations designed, developed and implemented centralized computing systems mostly automating their inventory control systems using inventory control packages (IC). These were legacy systems based on programming languages such as COBOL, ALGOL and

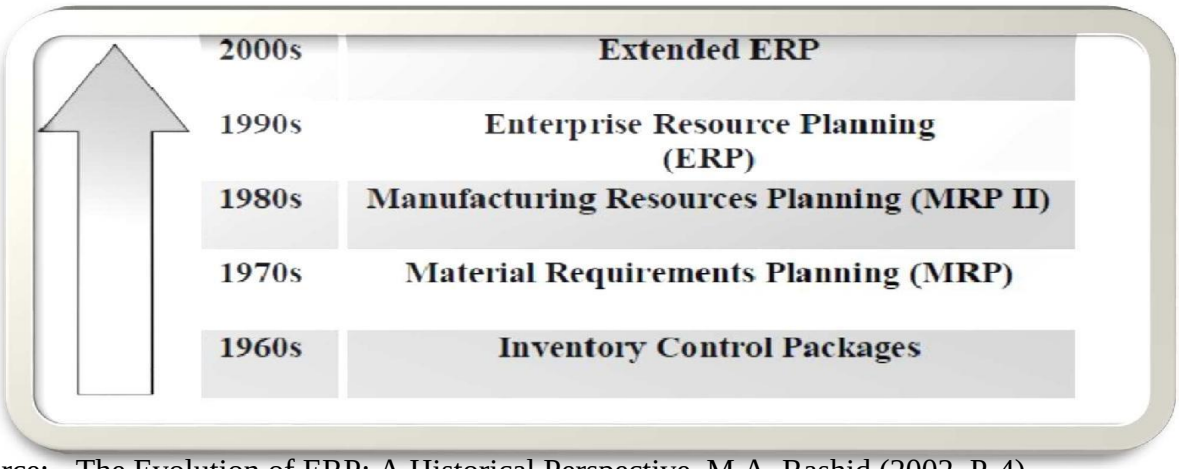
FORTRAN. Material Requirements Planning (MRP) systems were developed in the 1970s which involved mainly planning the product or parts requirements according to the master production schedule. Following this route new software systems called Manufacturing Resources Planning (MRP II) were introduced in the 1980s with an emphasis on optimizing manufacturing processes by synchronizing the materials with production requirements. MRP II included areas such as shop floor and distribution management, Project management, finance, human resource and engineering. ERP systems first appeared in the late 1980s and the beginning of the 1990s with the power of enterprise-wide inter-functional coordination and integration. Based on the technological foundations of MRP and MRP II, ERP systems integrate business processes including manufacturing, distribution, accounting, financial, human resource management, project management, inventory management, service and maintenance, and transportation, providing accessibility, visibility and consistency across the enterprise.



Source: The Evolution of ERP Systems: A Historical Perspective, M.A. Rashid (2002, P-3)

Figure 1: ERP Systems Concept

During the 1990s ERP vendors added more modules and functions as “add-ons” to the core modules giving birth to the “extended ERPs”. These ERP extensions include advanced planning and scheduling (APS), e-business solutions such as customer relationship management (CRM) and supply chain management (SCM). (ibid, 2002:6)



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

Figure 2: Evolution of ERP

2.1.3. ERP Implementation Success and Failure Factors

2.1.3.1. ERP Implementation Success

Enterprise resource planning (ERP) systems are highly complex information systems. The implementation of these systems is a difficult and high cost proposition that places tremendous demands on corporate time and resources. Boo Young Chung, (2007, 37) argues, what is considered a large project varies from one context to another depending on determinants including complexity, duration, budget and quality of the project. In ERP projects, the complexity depends on the project scope, including the number of business functions affected and the extent to which ERP implementation changes business processes. ERP projects achieving real transformation usually take from one to three years in duration. Resources required include hardware, software, and consulting, training and internal staff, with estimates of their cost ranging from $0.4 million to $300 million, with an average of about $15 million (Koch 2002). Therefore, by viewing ERP implementation as a large project in general, we can adhere to the fundamentals of project management for achieving the success of ERP implementation.

In order to better understand the process of ERP adoptions, a number of researchers have developed conceptual ERP life cycle frameworks or process models. Ehie and Madsen (2005) suggested a five-stage ERP implementation process using various reviews of the previous literature: project preparation, business blueprint, realization, final preparation, “Go-Live” and support.

- Project preparation refers to a comprehensive planning phase that forms a project team with leadership roles, sets budget targets, and defines the project objectives and plan.
- In the business blueprint phase, the current business process is analyzed in detail in order to select an appropriate ERP system. A project team then is trained on functionality and configuration of the selected ERP system. An understanding of the selected ERP system allows a project team to gain insight to reengineering its business processes.
- In the realization phase, a project team concentrates on implementing an ERP system including modification, development of interfaces, and data conversion. At the same time, each process design is tested on a conference room pilot.
- In the final preparation phase, the entire process is fully integrated and tested throughout the organization with full data and various scenarios. End users are trained in this phase as well.
- Finally, in the "go-live" and support phase, the ERP system is constantly stabilized and may have extensions for competitive advantage (Oliveira and Martins, 2011).

There is vast project management literature in the field of organizational research. Several researchers have developed sets of fundamental project success factors which can significantly improve project implementation chances (Shenhar et al. 2002). In addition, several researchers have identified the best practices and risks related to IS projects such as ERP implementation. Rabaa'i (2009) researched previous studies identifying critical success factors (CSFs) for ERP implementation. This research presents the top 12 most frequently cited CSFs from previous studies: Top management commitment and support, change management, project management, business process reengineering and system customization, training, ERP team composition, visioning and planning, consultant selection and relationship, communication plan, ERP system selection, ERP systems integration, and post-implementation evaluation measures.

According to Delgado, (2006), effective project management is critical for the successful ERP implementation. Bingi, Sharma, and Godla (2009) found that "a lack of proper understanding of the project needs and the inability to provide leadership and guidance to the project" are the main factors when ERP implementation fails. Thus, effective project management should define clear project objectives, develop a work and resource plan, and carefully track the project's progress. There are two approaches to implementing ERP systems in an organization: reengineering business processes and ERP customization (Shehab, Sharp, Supramaniam & Spedding, 2004).

Business process reengineering creates deep changes in organizational processes in order to fit them to ERP functions. On the other hand, when an organization wishes to maintain its existing processes using an ERP system, it can customize ERP functions. However, many researches indicate that ERP customization should be avoided or minimized in order to achieve the full of benefits offered by ERP systems.

End user training has been recognized a critical factor for ERP implementation, Bajwa, D. S., Garcia, J. E. & Mooney, T. (2014). Due to the complexity of the integrated ERP system, end user training is essential for a robust understanding of how the system works and how to use it. Consequently, appropriate end user education and training will maximize ERP benefits and increase user satisfaction. ERP team composition Since ERP covers diverse functional areas across an organization, ERP team composition is also important for the successful ERP implementation; an ERP project team should consist of representatives from all functional units related to ERP. Furthermore, ERP consultants play a critical role in ERP implementation. Consultants can be essential knowledge resources for ERP's hardware, software, and personnel. They also can help staff, have responsibility for project management, and audit the project. On the other hand, in order to be successful system maintenance after post-implementation, knowledge transfer from consultants is crucial for the organization. According to Al-Mashari, Al-Mudimigh, and Zairi (2003) strong communication within the entire organization during the implementation process increases success for ERP implementation. It allows the organization's stakeholders to understand the goal and the expected benefits of the project as well as to share the progress of the project. An "open information policy" protects the various communication failures for the project.

2.1.3.2. Critical Success Factors

According to Selvakumar Swaminathan (2011) cited, Themistocleous (2001), based on a survey of 50 respondents, underscored the need for integration of existing systems with ERP applications in ERP implementation. Stratman and Roth (2002) through a questionnaire survey of 79 North American manufacturing users of ERP systems identified eight generic constructs (strategic information technology planning, executive commitment, project management, information technology skills, business process skills, ERP training, learning, and 16change readiness) that are hypothesized to be associated with successful ERP adoption. Gargeya and

Brady (2005) by using a content analysis model and searching more than 100 articles and books propose following critical success factors for implementing ERP:

1. Worked with functionality / Maintained Scope
2. Project Team / Management Support / Consultants
3. Internal Readiness / Training
4. Deal with Organizational Diversity
5. Planning / Development / Budgeting
6. Adequate testing

Gargeya and Brady (2005) proposed model seems the most complete model. So the model is selected for explanation.

Factor 1: Worked with Functionality/Maintained Scope

A crucial part of working with the ERP functionality is the ability to streamline operations. When implementing a system, many organizations fail to specify their organizational objectives. Job skills are raised by the requirements of the new, post-implementation company. Idiosyncratic ways of doing business, which were manageable, although most likely inefficient, under the "old system", are no longer tolerated. Companies that do not understand these issues early on will face serious problems (Davenport, 2000).

The ability to implement ERP with minimal customization requires assistance from several other factors, primarily streamlining operations and re-engineering the business - both of which will help the organization to run in a more straightforward manner. Thorough planning is also a close partner, as it is threaded through the plans from scope to budgets (Gargeya and Brady, 2005).

Factor 2: Project Team/Management Support/Consultants

The ERP team should consist of the best people in the organization (Buckhout et al., 1999; Bingi et al., 1999; Rosario, 2000; Wee, 2000). Building a cross-functional team is also critical. The team should have a mix of consultants and internal staff so the internal staff can develop the necessary technical skills for design and implementation (Sumner, 1999). Both business and technical knowledge are essential for success (Bingi et al., 1999; Sumner, 1999). The ERP project should be their top and only priority and their workload should be manageable (Wee, 2000). Team members need to be assigned full time to the implementation (Wee, 2000). As far as

possible, the team should be co-located together at an assigned location to facilitate working together (Wee, 2000).

A successful implementation is only achievable when high-level executives have a strong commitment to the project (Davenport, 2000). The attitude of senior managers will affect not only the flow of funds and information to the project, but also the subordinates view the project, its future impact upon the company as a whole, and its impact upon the employees as valued and capable individuals. Top management support is needed throughout the implementation.

Factor 3: Internal Readiness/Training

The "people element" and training aspect of an ERP implementation have historically received the least amount of attention. The paradox of this is that when this factor is ignored or downplayed, primarily because it does not have the largest quantifiable benefit, expenses are greatly increased in the long run. By treating resource training with little regard and financial support, it is not hard to realize the reality of delay, confusion and financial ruin that may result. Some companies insist on assigning a fixed cost or percentage to the training effort, regardless of need or variable conditions (Gargeya and Brady, 2005).

Training, re-skilling and professional development of the IT workforce is critical. User training should be emphasized, with heavy investment in training and re-skilling of developers in software design and methodology (Sumner, 1999). Employees need training to understand how the system will change business processes. There should be extra training and on-site support for staff as well as managers during implementation. A support organization (e.g. help desk, online user manual) is also critical to meet user's needs after installation (Wee, 2000).

Internal readiness success factor is too broad that contains many of other factors such as management support, budgeting, business process reengineering. So, for to avoidance of repeating these factors internal readiness will be considered as readiness for change.

Factor 4: Deal with Organizational Diversity

Organizations have many cultures. Individual branches of the same organization have their own ways of doing things, and each function/department operates with different procedures and business requirements. Not unexpectedly, the larger, more global companies cite their diversity as an obstacle to success (Gargeya and Brady, 2005). Individual units and groups are often

companies of their own right, and do not wish to be assimilated into one corporate culture. "Re-engineering" of the business is required here, both on the "people" level, and on the operational level. This organizational diversity differs from factor #1 (worked with functionality/maintained scope) in that the company changes its culture, not just its processes.

Factor 5: Planning/Development/Budgeting

Planning a sophisticated ERP project should not be taken lightly or with little forethought. As mentioned before, there are enormous potential costs associated with such an undertaking. In addition to the high costs paid out before the go-live date, there can and have been major expenses incurred by companies that were unable to fully develop a comprehensive plan. Planning should be closely identified with maintaining scope during an implementation. Cost overruns and developmental delays are costly, sometimes fatal results of ineffective planning (Gargeya and Brady, 2005).

A clear business plan and vision to steer the direction of the project is needed throughout the ERP life cycle (Buckhout et al., 1999). A business plan that outlines proposed strategic and tangible benefits, resources, costs, risks and timeline is critical (Wee, 2000). This will help keep focus on business benefits.

Software development, testing and troubleshooting is essential, beginning in the project phase (Nah et al., 2001). The overall ERP architecture should be established before deployment, taking into account the most important requirements of the implementation. This prevents reconfiguration at every stage of implementation (Wee, 2000).

Implementations can become very costly, despite all efforts at developing a solid plan. Many projects, especially failed ones, find themselves over budget, some by as much as 189 percent (Gargeya and Brady, 2005). Only one-sixth of projects are completed on time and within budget (May, 1998).

Factor 6: Adequate Testing

System testing has proven to be the key element of success for some companies and a direct cause of failure for others (Gargeya and Brady, 2005). Gargeya and Brady, (2005) argue that "after months or years of development, it may be feasible to assume that both team members as well as executive management are tired of dealing with the project and just want it to be

completed. The result of this myopic thinking, however, is that testing is reduced or ignored, and "red flags" are disregarded."

Troubleshooting errors is critical (Holland et al., 1999). The organization implementing ERP should work well with vendors and consultants to resolve software problems. Quick response, patience, perseverance, problem solving, and firefighting capabilities are important (Rosario, 2000). Vigorous and sophisticated software testing eases implementation (Rosario, 2000).

2.1.3.3. ERP Implementation Failure

GoeunSeo (2013:10) agrees that in spite of ERP's significant growth from the challenges that companies may encounter when implementing ERP. Dillard and Yuthas (2006) stated that most firms are using ERP and that more small and midsize companies have begun to adopt ERP system. Despite to benefit company's ERP's and a promise substantial capital investment, not all ERP implementations have successful outcomes. ERP implementations commonly have delayed an estimated schedule and over run an initial budget (Ehie& Madsen, 2005; Helo, Anussornnitisarn & Phusavat, 2008). The blurring of company boundaries can cause problems in accountability, lines of responsibility, and employee morale. Resistance in sharing sensitive internal information between departments can reduce the effectiveness of the software (Maditinos, Chatzoudes & Tsairidis, 2012).

Previous studies have identified critical success factors for successful implementation of an Enterprise Resource Planning system, which entail the following; top management support, business plans and vision, change management and culture, business process re-engineering, education and training, selection and support among others (Umble, 2003). The studies have also highlighted the benefits derived from Enterprise Resource Planning implementation which entail ability to integrate various functions, cost and value advantages, ability to manage data real time, internal improvement or infrastructure investment, improved customer service, user satisfaction, spotting market trends, ability to adapt to change, increased output, lower production costs among other many.

According to Helo*et al.*, (2008), 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, incompatible business processes, project

mismanagement, top management and commitment, Lin (2004) presented the top ten risk factors causing ERP implementation failure (See Table 1 below).

Table 1. Top ten risk factors of ERP

Priority	Name
1	Lack of senior manager commitment
2	Ineffective communications with users
3	Insufficient training of end-users
4	Failure to get user support
5	Lack of effective project management methodology
6	Attempts to build bridges to legacy applications
7	Conflicts between user departments
8	Composition of project team members
9	Failure to redesign business process
10	Misunderstanding of change requirements

Source Huang*et al.*, 2004

2.1.4. ERP Implementation Life Cycle

ERP Implementation Life Cycle is the process of implementation of the enterprise resource planning in any organization. It involves many steps and stages right from the start, planning for project implementation, analysis, design, implementation, transition and operations. ERP implementation lifecycle highlights the different phases of implementing an ERP system. It starts from the projection of the ideal ERP package that is suitable for the company. The steps involved in the life cycle of the ERP implementation are:

Selection of packages: This is the first step of the life cycle where the perfect ERP package has to be selected in agreement that fits your business environment. In the selection process, ERP packages that are not suitable they are eliminated. The package has to be carefully selected and testified. The right choice will determine the success of the ERP implementation. A proper study and research should be done before the selection.

Project Planning: Proper planning of the implementation process of the project shall be made and designed. Resources should be allocated, and the team members have to be selected. Analysis GAP: GAP analysis is an important step in the life cycle of ERP implementation step. GAP

analysis is performed to analyze the current situation of the organization and its future position as needed.

Re-engineering is needed to make the implementation process involves many changes and alterations. The job responsibilities of employees and the number of employees can be altered as well. This step is done to make the business process more efficient.

Training: Training of employees starts with the implementation process in the life cycle of the ERP implementation. Employees of getting used to the new system in order to run the system smoothly later. Get the time at this stage to learn the software and its features and become self-sufficient in order to be able to operate later, when consultants and suppliers to end and go.

Testing: Testing is an important step and is carried out so that the errors can be found and resolved before the actual application process.

Application: This step is performed when data conversion is done, and the work of the database is over. After setup and testing is completed, the actual implementation is done. Once the new system is implemented, the old system is removed. The end user is trained on how to use the new system.

Maintenance: Maintenance is carried out in the post-implementation life cycle of ERP implementation phase. The problems are identified, and employees learn how to deal with it. Maintenance is also an important stage in the life cycle.

These are the stages of ERP project goes through a cycle of life of the ERP implementation. It is important to complete these steps with attention to detail in order to run the ERP project successfully. After the application is done, maintenance is also important, and the system must be regular updates to keep up with changes in technology.

2.1.5. Key Activities in ERP Implementation

According to an independent report in 2013 by the ERP consulting firm in the United States, Panorama Consulting (2018) one of the high points of any digital transformation is the moment a company decided to replace your old legacy systems and consider ERP implementation. During the software selection stage of a project, chances are you've evaluated and maybe even already selected new systems with the potential of improving your business and making employees' jobs

easier. All this excitement and momentum can be a good thing and it's important to have a solid plan on "how" to move forward. Too often, companies let the project momentum speed towards implementation without first assessing the situation, assembling a realistic implementation plan, corralling resources and doing a number of other things that need attention prior to commencing the implementation.

1. Validate the scope and timing of your ERP software purchase

Once you've decided on the best software solution(s) for your organization, it's important to validate what exactly you're purchasing. Too often, companies experience a disconnect between the software viewed during demos and the ones purchased via your software. Be sure you are purchasing the right modules, bolt-ons and user licensing types for your organization. Remember, you don't have to buy all the software up front; you can always negotiate the timing of the purchases to coincide with your deployment schedule. One way to navigate the complexities of an enterprise software contract is to enlist the help of an independent, third-party ERP consultant to help negotiate an agreement that makes the most sense for you. ERP consultants are keenly aware of current software pricing and price flexibility (think discounts) that may not be offered when buying direct from a software vendor or reseller.

2. Source Your Internal and External Implementation Project Resources

Your software vendor sales rep may want you to start your project right away since doing so will optimize their compensation, but it's important you only do so once you have the right team in place. There are a number of business, IT and consulting resource considerations (internal and external) to be identified and sourced prior to beginning. Roles and responsibilities should be defined for the program manager, internal and external project managers, organizational change leads, business leads and a host of other roles.

3. Build a Complete Implementation Project Strategy and Plan

Software implementations require focus, effort and planning well beyond what a system integrator, vendor or VAR can provide so it's important to develop an implementation plan incorporating all the critical components required for success. Some of these components will come from your software vendor and you will want to augment these with critical tasks outside the purview of most ERP vendors and consultants. For example, organizational change management, business process

improvement and program management are just three areas commonly overlooked. Be sure to enlist the help of agnostic, third-party consultants to help define/develop a well-honed implementation strategy and plan that's the most suitable solution for your company's unique situation.

4. Begin Key Implementation Critical Path Activities

Even though most ERP implementations take more time than expected, delays aren't typically caused by technical or software issues. More commonly, there are other critical path activities delaying projects, even if the software is fully configured and tested. For example, issues related to people, business processes and data are much more likely to delay your project and create cost overruns than the software. It's important to focus your early efforts *less* on software configuration and more on those critical path activities, such as data migration, organizational change planning and defining business process improvements.

5. Define your implementation project charter

Once all the above have been completed, a fifth area of focus should be to define a clear project structure and governance. Ensuring you have the right structure and controls in place, will enable you to optimize limited resources and maximize your ROI during implementation. A formalized project charter, including your plan, project roles, project governance and controls is the best way to accomplish this.

2.1.6. Reasons for Ethio Telecom to Go for ERP

As indicated on the company website, as a continuation of the 2005/06 – 2009/10 five-year plan and after concentrating its efforts on education, health and agriculture, the Ethiopian government has decided to focus on the improvement of telecommunication services, considering them as a key lever in the development of Ethiopia. Ethio telecom is born, on 29th November 2010, from this ambition of supporting the steady growth of our country, within the Growth and Transformation Plan (GTP), with ambitious objectives for the year 2015. The Ethiopian government has decided to transform the telecommunication infrastructure and services to world class standard, considering them as a key lever in the development of Ethiopia. Thus, ethio telecom is born from this ambition to bring about a paradigm shift in the development of the telecom sector to support the steady growth of our country.

Ethio telecom is a sole telecom operator in Ethiopia established as a public enterprise on 29th day of November 2010 as per the Council of Ministers Regulation No. 197/2010. The company aims to provide next generation network services based on a world class standard information technology services and to build a competent next generation network-based workforce with appropriate knowledge, skill, attitude, and work culture. Since its establishment as ethio telecom, the company has registered several accomplishments required to transform the company to level expected from a competent and modern telecom service provider.

So far it has availed full range of coherent telecom Products and Services for all markets and segments, undertaking high level capacity building programs within very short period of time, tried to curb recurrent quality of service problems, launched the first professional Call Center in Ethiopian. In addition to telecommunication infrastructure deployment it is most important to equip the back-office activities through ITC in a manner that can highly assist the core telecommunication activities, and implementation of modern information and management technologies guarantees a successful improvement in competitive ability. The offered solutions are in demand by the companies seeking to enhance monitoring systems and upgrade their business activities.

As the number of customers increasing with need of quality service in a short period of time the need to have up-to-date information about all operation and financial indicators, assets and resources of all departments and divisions. Hence, the requirements for a powerful system that can quickly process large volumes of information are highly required.

ERP system is an information backbone and reaches into all areas of a business and value chain. ERP integrates all departments and functions across an organization into a single computer system that aims to serve practically everyone's particular needs. It eases the exchange of data and facilitates communication among departments. Each module works separately, performing specific data-processing functions.

ERP or enterprise resource planning is a commonly used software package for enhancing the operational efficiency of business resources. It is a composition of software modules assisting company owners to achieve their goals at a faster rate. Implementation of ERP for an organization is done on the basis of company requirements. Today, ERP is a widely applied software system in all types of industrial fields including small and medium sized companies. Inventory control,

better human capital management, customer relationship management and order tracking are some among the key benefits of implementing enterprise resource planning.

In addition to the above reasons and to accomplish the vision of the company to become world class operator with the vision of to become a world class operator. To be a world class telecom operator there are many requirements set by ITU that all telecom operators across the world need to fulfill, and some of the requirements are having a well-defined business process as per the international standard named eTom and PCMM, supporting all this business process by information system mainly ERP and deploying the best quality of service for the customers inall aspects of product and services. Hence; for the fulfilling the expected requirement and to support the steady growth of the country's economic development ethio telecom implemented an integrated ERP system on December 01/2011 on a modular manner. And mainly the license for this system implementation has been procured from the world well known software developer named Oracle through open tender and integrated by softpro (i.e. Indian software integrator). And the major reasons that drive the company to choose for ERP are mainly related to improving company's performance and decision making, to reduce labor costs, bureaucracy and other related errors. And the other reasons are to enhance the integration among work units and establish organizational standardization across different locations.

2.2. Empirical Literature Review

All the best practices that have been discussed in previous section conclude many important things to remember during ERP implementation. For example; Business requirements have to be done based on the priority order; it is equally significant as defining them. Defining requirements of business is not just a onetime decision or activity that results in a static requirement set for selecting a vendor. It must be an on-going or continual process, on the regular basis that must be refined to reflect ensure that technical capabilities of ERP software must match the defined requirements of business. According to Alemu Samuel, Mesfin Belachew and Mesfin Kifle on their studies on ERP Implementation framework in the case of Ethiopia, to ensure successful implementation, organizations must learn how to identify the critical issues that affect the implementation process and know how to address them effectively to ensure that the promised benefits can be realized and potential failures can be avoided.

According to Sintayehu Demeke (2014), in his study on Success Factors for implementation of Enterprise Resource Planning System at Ethiopian Airlines pointed out that twenty critical success factors for success of ERP systems. Factors such as project planning, top management support, project management and leadership, capability of consultants, change management and communication, organizational readiness and overall knowledge transfer are among the factors found to be critical for ERP system implementation in the Ethiopian context.

An ERP greatly reduces the need to manually enter information and also eliminates several repetitive processes. ERP software can also streamline business processes by making them efficient and easier for organizations to collect data and information, irrespective of the various departments. ERP System offers better convenience to data. So that, management can has quick access to information to make decision. Binam Tolla (2017) in his study on the practice and challenges of ERP system implementing at Africa Union Commission, by implementing the system the commission benefited in reducing the financial cycle time, decision making cycle time and shortening the process taken in procurement process.

Organizational culture heavily affects ERP implementation. Tsichritzis (1999) indicates that today's universities have been forced to admit that "education is a business and students are the customers". ERP implementation encourages universities take a more business-like approach to education, resulting in cultural changes including "the use of managerial language and techniques" (Allen, Kern & Havenhand, 2002). There can be resistance to ERP implementation at universities because it involves not merely the adoption of a new information system, but a holistic change in organizational culture.

While there are diverse forms of management hierarchy from university to university, Birnbaum & Edelson (1989) describes that there exist two sources of authorities within a university: administrative authority and academic authority. ERP implementation is believed to reinforce administrative authority as a model of governance. For academics, this may lead to fear that use of a new system that results in increased transparency of their transactions would result in a loss of control. On the other hand, administrative staff may fear for their job security when redundant processes are eliminated work functions are automated across a university (Allen *et al.*, 2002).

Also, as ERP systems are "large integrated packaged solutions" with dynamic complexity, it may cause difficulties with implementation for management and IT staff in universities, even those

who might have comprehensive understanding of their own organizations (Pollock & Cornford, 2005). This is because universities have expanded a range of systems many of which have sometimes competing functions whenever they had particular needs (Pollock & Cornford, 2005). In the worst case, universities do not always have management or IT staff who are well-versed in organizational functions.

Standardization and integration, both of which are key features of ERP systems, limit flexibility in university systems. This loss of flexibility may lead staff to create 'workarounds' in which workers attempt to carry on their previous processes. This response to new ERP systems may ultimately increase staff workloads and create a data gaps between the system and reality.

Appropriate training is very essential during and after the implementation. The staff should be comfortable in using the application or else, it will backfire, with redundant work and functional inefficiencies. Biniam Tolla (2017) pointed also that lack of appropriate training for all system users will result the deployed ERP system does not make the working process fully automated, and the organization is forced to use both manual and automated working system.

According to Kiarie and Wanyama (2017). Internal factors influencing the adoption of ERP system include; the top management, project team constitution as well as the above average knowledge requirements. Additionally, the internal factors influencing the implementation of ERP system, effective communication, management of project team members as well as training and skill development. The most important factor when adopting and implementing ERP system is the top-level management's commitment to the strategic direction itself. Hammer (2008).

Employee involvement, communication, and leadership nature management should provide employees with channels of communication and improve their ability of understanding each other. (Motwani et. al, 2008). Top managers should drive the changes by providing vision (shared vision). Employees should become more responsive. Other members in the ERP system team should understand the process. Top Effective communication is vital to organizational decision making (Grint, 2011)

Provitizi (2012) discussed about the importance of taking appropriate decision. In order to take appropriate decision in the implementation, we have to gain executive and organizational commitment. Epicor (2013) For the best-in-class implementation of ERP, the full commitment

and support of the firm's executives are to be successful implementations of ERP and without their support, initiatives of ERP will not function properly in the corporate resources and funds.

Wider et al (2006) refer that when managing important initiatives, organizations have to consider only process, people, and technology. Organizations have to consider controls and risks as an extra dimension to manage a system change. It is also noted that when designing controls in an enterprise or organization, it must determine a balance such dimensions such as process optimization, risk and controls, technology, organization and people (Velcu, 2007).

For establishing the right teams, business processes must be defined to improve. Wei (2008) and Wielder et al (2006) point out that the key advantage of an ERP system is to automate and streamline processes in the business. Processes incline to develop over time, other than from a focused effort to constantly further and enhance them on the basis of strategic value. If the ERP solution does not enhance the business processes, it is important to examine how organizations functions processes in the business and then identify ways to implement the functionality to enhance and streamline such processes.

According to Davenport (2000), implementation of ERP not only affects the business and system process, it also affects those people who will find it tough to change processes, roles and behaviors that they have learned or worked over for many years. We cannot expect employees or other staffs to change their behavior and skills during the implementation of ERP within the short span of time. The change management is constant, ongoing process have to begin from the first day and continue throughout the entire implementation process, until the final day or end-user training of the project. Change management is critical to the ERP initiative success. Employees must understand the new job roles and process during particular time period, so that they can able to adopt and internalize these new developments. If this is not followed, there will be a drastic outcome in organizational resistance as well as operational risk.

Adequate hardware and networking infrastructure are required for Enterprise System application. Enterprise System cannot be without sophisticated information technology infrastructure. Three primary attributions of success were identified from the descriptive statistics: willingness to change to new computer applications, effort, and persistence (Amoako-Gympah, 2005; Sandoe et al. 2001; Kelley et al. 1999). In addition to the infrastructure, clearly, the software

configuration has a critical influence on the implementation process and outcome (Holland et al. 1999).

IT infrastructure, economic status, government regulation, changes in the business environment, power of buyers, power of suppliers, organization fit as well as the threat of substitute products are external factors that affects the implementation of ERP system Kiarie and Wanyama (2017). IT infrastructure comprises the basic requirements for ERP implementation. ERP bring about numerous roles, including the internal processes of the company itself and its suppliers, customers, banks, etc. The reliability of the entire infrastructure is required to assist in completing assessment sequence running enabled by ERP Ruey-Shun, et. al, (2008).

2.3. Conceptual Framework

The Conceptual framework developed by researcher based on the literature review. There are many Factors on Practice of ERP implementation. This research study has mainly focused on Top Management Commitment, Education and Training, ERP Consultant, User Support, effective communication, user friendliness, Project team composition and Organizational Culture after ERP implementation.

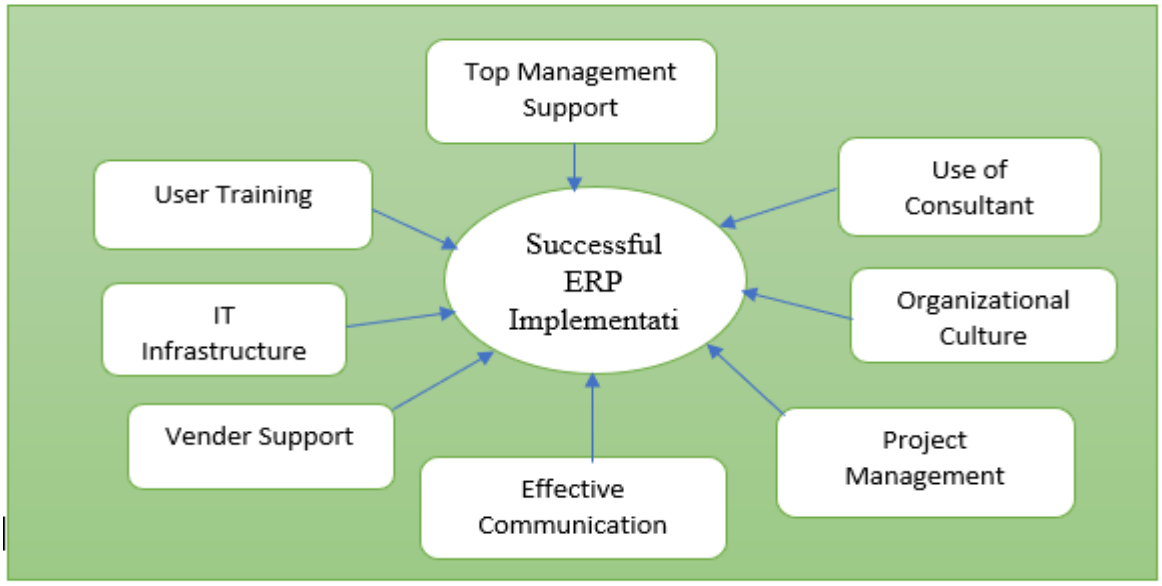


Figure 3. Conceptual Framework

CHAPTER THREE
RESEARCH METHODOLOGY

This chapter concerned about, what types of research design is selected, reasons for the selection of the design and what types of data collection method is used. This chapter also explains how data tabulated (administered), target population, sample size, sample techniques and the reasons for selection sampling method. It also describes the quality, and reliability of the data.

3.1. Research Design

Descriptive research design is to be adapted for this study. With the objective of the research to assess and describe the practice and challenges of implementing ERP system in ethio-telecom, descriptive type of research is better because descriptive study is one in which information is collected without changing the environment. It is used to obtain information concerning the current status of the phenomena to describe "what exists" with respect to variables or conditions in a situation. Moreover, the study involved different group of people from different angles it is appropriate to use this method to obtain information about ERP implementation of success and challenges.

The researcher has used multiple research method to analyze the collected data. Multiple methods research is a methodology for conducting research that involves collecting, analyzing and integrating quantitative (e.g., experiments, surveys) and qualitative (e.g.focus groups, interviews) research. This approach to research is used when this integration provides a better understanding of the research problem than either of each alone. According to Creswell (2003) the use of both approaches is tandem so that the overall strength of the study is greater than either qualitative or quantitative research. Having the above reasons mixed method research is selected to express the current phenomenon of a situation and gives prediction depending on the finding of the research and to describe the basic questions stated in the research. Therefore, survey strategy used to collect large amount of data using a questionnaire and semi-structured interview from a sample population in a highly economical way.

3.2. Data Source and Collection Method

There are different ways of data collection methods depends of the type of data and research method, among others the two basic methods by which the researcher used to collect data, which are questionnaire and interview check list. The questionnaire was distributed to the representative of employees. The interview check list is used to collect response from section managers. The primary data obtained from distributed questionnaire and interviewed to selected managers respectively in the selected zones. Primary data is collected from managers after analysis of questionnaires data for further clarification and see in detail the response and result of survey. The secondary data gathered from different texts, books, related written with the subject matter, appropriate data from ethio telecom, related researches conducted before, from Internet and other sources. The questionnaire is designed mixing of close-ended and rating questions most frequently use five levels Likert-style rating scale (Saunders et.al, 2007).

3.3. Population, Sample Design and Sampling Techniques

Based on the company's structure, ethio telecom has seventeen Regional (located out of Addis Ababa) and Zonal offices (located with in Addis Ababa). At each office, the structure (the number of departments) and activities are same. In all Zone and Region, the company is represented by Director, Managers, Supervisors, and Staffs. The first two levels are classified as management group whereas the last two levels are categorized as non-management group. Therefore, to be representative the sampling considered both groups. Due to time and financial constraints the researcher focused on six zonal staffs; the result of the research does not impact since the respondents are working on same environment.

This research study included as a target population that employee of Finance, Human Resource and Sourcing and facility department located at six zones of Addis Ababa level including the management team in both departments. The total number of employees in three department is 273 based on company profile December 2018. Therefore, the population of this research is 273 staffs that working in three department and actively working on ERP system.

Generally, a representative of the total population has been included in the research study. All parties practicing of Enterprise Resources Planning System are represented by the sample. As department human resources, Finance & Sourcing and Facility divisions are major source of information. Therefore, to be representative the sampling considered both groups. In determining

the actual sample size, the researcher taken in to account the minimum required returned sample size, type of data analysis to be used and the expected rate of missing data.

Determining sample size varies for various types of research designs and there are several approaches in practice. A general rule, one can say that the sample must be of an optimum size i.e., it should neither be excessively large nor too small (Kothari, 2004). The researcher has taken Zikmund and Babin (2010) sampling technique by determining the sample proportion success and not success based on the experience from previous survey research response rate. Saunders, Lewis and Thornhill (2012) state that the likely response rate shall be reasonable 50% or moderately high, while Patrick (2003) referring Babie (1979), the return or success rate 50% is 'adequate'; 60% response rate is 'good' and 70% rate or higher is 'very good'. Having this experience, for this research purpose confidence of successfully collect or return rate is expected to 90% because the respondents are located on specific area and easy to collect questionnaires and the remaining might be defected or non-response, and sample size is determined at 95% confidence level.

The sample size was 207 respondents out of a target population of 431 Human Resource, Finance, Sourcing, Fleet and Facility departments. These were selected to ensure that the sampling size had characteristic representation of the population using the formulae sited by Mugenda and Mugenda (2003). The formula to find the sample size is:

$$n = \frac{N}{1 + (N * e^2)}$$

Where; N= population size

e= Tolerance at desired level of confidence, take 0.05 at 95% confidence level

n= sample size.

$$n = \frac{431}{1 + (431 * 0.05^2)} = 207$$

Therefore, based on the above given information and sample size formula, the sample size for this study is 207.

Respondent selection

Employees

For this study, the researcher has used both stratified random sampling to distribute a questionnaire and non-probability sampling to conduct an interview. Stratified random sampling techniques were used for three departments and give equal chance of being selected for each stratum. Each member of the subset has equal probability of being chosen.

Managers

In order to select managers, the researcher used non-probability sampling (Saunders et.al, 2007). Non-probability sampling technique, which is judgmental sampling to select managers who are working at each department. They are less in number and have good work experience. Therefore, all managers in each department that are working at zonal office are included in this study.

Number of staffs and Sample ratio for the sample frame:

Table 2. Number Staff sample ratio

No.	Department	Layer Size	Strata
1.	Human Resource	46	22
2.	Finance	152	73
3.	Sourcing, Fleet and Facility	233	112
	Total	**431**	**207**
	Strata= Sample Size/Population Size* Layer Size		

Source: ethio telecom, SWAAZ Human Resource

3.4. Data Presentation and Analysis

Before processing the response, the completed questionnaires were sorted, checked and edited for completeness and consistency. The data then coded to enable the responses to be grouped into various categories. Descriptive statistics technique is used to analyze the quantitative data. Coding is done on SPSS V-23, analyzed and the output interpreted in frequencies, percentages. The findings are presented using tables.

3.5. Validity

Statistical validity also used to measure the validity of the research though use of correct statistical procedure and instruments (Neuman, 2007). To insure the statistical validity of the study, the researcher has collected quantitative data using questioner and analyze the data using correct statistical instruments like descriptive statistics and According to Adams et al., (2007) internal validity is used to assure the research validity. To threat the internal validity of this research, questioners are distributed within same period of time and collect within one week, and reasonable sample is taken from the population and questionnaires randomly distributed to participant.

In addition to this, the researcher received comment from the advisor and other expertise on the questionnaire and overall research methodology. Furthermore, pilot taste has been made by distribute small questionnaire. The major objective of the pilot taste was to get feedback on the questionnaire way of preparation, wording, coherence and any other valuable comment and to in incorporate any important comments and finalize the questionnaire.

3.6. Reliability

The test of data reliability is another important test of sound measurement. A measuring instrument is reliable if it provides consistent results, (Kothari, 2004). Moreover, reliable measuring instrument does contribute for validity. Hence, to prove reliability of the instrument, the researcher has distributed some questionnaires as a pilot test and then makes some adjustments accordingly.

According to Joseph and 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 and Mallery, 2003, p. 231), if "$\alpha > 0.9$ – 'Excellent', $\alpha > 0.8$ – 'Good', $\alpha > 0.7$ – 'Acceptable', $\alpha > 0.6$ – 'Questionable', $\alpha > 0.5$ – 'Poor', and $\alpha < 0.5$ – 'Unacceptable'.

Table 4 below shows that there is "acceptable" and "good" internal consistency of each independent variable's parameters used. The study has the sum of the independent variables

average Cronbach's alpha value of (α = 0.890) and the reliability test of the study is located on "Good" range.

Table 3. Reliability Test of Variable's Using Cronbach's Alpha

No	Variable Name	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items	Reliability Range
1	ERP system Meets business requirements	.883	.881	5	Good
2	Organizational Culture	.869	.866	4	Good
3	User Training	.878	.881	6	Good
4	Customization of the system	.878	.892	4	Good
5	IT Infrastructure	.860	.865	4	Good
6	Effective Communication	.797	.818	4	Acceptable
7	User Support	.920	.924	3	Excellent
8	Use of Consultants	.708	.796	4	Acceptable
9	Top Management Commitment	.788	.797	4	Acceptable
10	Resistance to Change	.760	.761	2	Acceptable
	All together	.890	.887	40	Good

Source: Own Survey, 2019

3.7. Ethical Issues

When the questionnaire was distributed, the researcher has explained the purpose of the questionnaire and informed the respondents that it is intended for academic purpose. The researcher has tried convincing the respondents about the confidentiality of their respondent, in order they have confidence about their responses. The researcher tried to avoid misunderstandings. In order to avoid such problems, the researcher provided his phone number and responded immediately to their question clarity.

CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION

This chapter presents the results of the study and interpretation of the findings. The chapter comprised of two sections. The first part presents the profile of respondents showing gender, age group, level of education, work experience, and position of respondents using simple description. The second part presents analysis of the study variables by using tables and consisting of percentages, and it contains the discussion of results and overall responses.

4.1. Demographic Profiles and Characteristics of the Respondents

This section presents the findings from descriptive statistical analysis for demographic characteristics of the respondents namely gender, educational status and age group. The description is made using percentages.

Gender of the Respondents

Accordingly, based on the collected data from the respondents, among the total respondents' males cover relatively higher number (52.3%) and the remaining is covered by female respondents (47.3%).

Table 4. Gender of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	107	52.7	52.70	52.70
	Female	96	47.30	47.30	100.0
	Total	**203**	**100.0**	**100.0**	

Source: Own Survey, 2019

Age of the Respondents

Age group of the respondents is referred majority of the respondents in the group of the ERP users were found to lie down in the age group range of between 26 and 35 (43.3 percent). The rest of the ERP users were lied down in the age groups of 41 and above (9.4 percent), 36 – 40 (28.1 percent) and below 25 (19.2 percent). Therefore, youngsters comprise of nearly 63 percent of the ERP users in Ethio-telecom selected section of the six zones, which could guarantee the future of enterprise resource planning in the company.

Table 5. Respondents Background data

Variable		Frequency	Percent	Valid Percent	Cumulative Percent
Age	Below 25	39	19.2	19.2	19.2
	26-35	88	43.3	43.3	62.6
	36-40	57	28.1	28.1	90.6
	41 and Above	19	9.4	9.4	100.0
	Total	**203**	**100.0**	**100.0**	
Educational Level	College Diploma	25	12.3	12.3	12.3
	First Degree	164	80.8	80.8	93.1
	Master and Above	14	6.9	6.9	100.0
	Total	**203**	**100.0**	**100.0**	
Service Year	Less than 5	22	10.8	10.8	10.8
	6-10	49	24.1	24.1	35.0
	11-15	53	26.1	26.1	61.1
	16 and above	79	38.9	38.9	100.0
	Total	**203**	**100.0**	**100.0**	
Work Unit	Human Resource	26	12.8	12.8	12.8
	Finance	67	33.0	33.0	45.8
	Sourcing and Facility	110	54.2	54.2	100.0
	Total	**203**	**100.0**	**100.0**	
Position	Staff	153	75.4	75.4	75.4
	Supervisor	25	12.3	12.3	87.7
	Manager	24	11.8	11.8	99.5
	Director	1	.5	.5	100.0
	Total	**203**	**100.0**	**100.0**	

Source: Own Survey, 2019

Education Level of the Respondents

Table 4.2 shows that few respondents (12.6%) have educational level of Diploma while the majority of the respondents (80.8.3%) have acquired their first degree. 6.9% of the respondents have second degree from the total sample. Based on their educational status, it can be said that the respondents have the ability to understand the language of ERP system.

Company Experience of the Respondents

Based on service year of sample respondents shown on Table 4.2., 24.1% of them have 6-10year service in the company. 26.1% of respondents have from 11-15 years of service and 10.8% has less than five years of service and 38.9% of respondents have 16 and above years of service in

the company. From this result we can say that, this study target respondent has different work experience in the company and have knowledge to reply the questions regarding the existing Oracle ERP Practice and Challenge in ethio telecom.

Work Unit of the Respondents

As it is already explained in the research design and methodology part, the researcher has focused on the three major section of ERP user under all Addis Ababa Zonal Offices. Accordingly, out of the 203 employees who returned the questionnaire, 12.8% of the respondents belong to Human Resource, 33.0% belong to Finance and 54.2 of the respondents belongs to Sourcing and Facility Division.

Position of the Respondents

From the point of view of the job positions that the ERP users hold in the company, the respondents were divided in to managerial (supervisory or managerial and director office position) and non-managerial positions. Accordingly, majority (75.4 percent) of the ERP users in Ethio-telecom were seen to be non-managerial employers. The remaining share (24.6 percent) of workers goes to that of managerial (supervisory or managerial office position). Therefore, the results as shown on Table 6. of descriptive analysis reveal that enterprise resource planning is exercised in non-managerial positions than managerial or supervisory positions.

4.2. Deployment of ERP System in Achieving the Business Requirement of the Company

This part covers the data presentation and analysis on how much the deployed ERP system meets the business requirements of the company in achieving the goal of making the business process fully automated.

Table 6. Deployment of ERP System in Achieving the Business Requirement

No.	Statement	Scale				
		1	2	3	4	5
1.	ERP implementation makes the working process of ethio telecom fully automated	14.80%	33.50%	17.20%	24.60%	9.90%
2.	ERP improves your efficiency in the organization	8.90%	28.50%	4.40%	40.40%	17.70%
3.	Non-value adding jobs and processes are reduced after ERP implementation	9.90%	12.30%	16.30%	45.80%	15.80%
4.	There are some functional areas still using both the manual & automated working system	16.70%	13.80%	10.80%	39.40%	19.20%
5.	ERP implementation enhances cross-functional integration	12.30%	16.70%	6.90%	47.80%	16.30%

Source: Own Survey, 2019

The researcher has raised a question on whether the ERP implementation makes the working process fully automated, especially on the area it is deployed, 48.30% of the respondents replied that the deployed ERP system doesn't fully automate the business process of the company in the area it is fully deployed. On the contrary, 34.50% of the respondents believed that the deployed ERP system makes the entire company business process fully automated (specifically on the divisions that the system has been already deployed). The remaining 17.2o% respondents are neither of the two sides. Based on this fact, we can say that majority of the respondents believe that the ERP implementation does not make the company working process fully automated and there are some tasks that has been handled manually even if the system is already there to support the daily activities. The manual work done during system interruption increases the burden of the employees to encode the data that has been done manually. This will affect the access that can get on time and organized information. In addition, when top management wants information about timely information of the company, they cannot easily extract from this system.

Concerning on system in enhancing the efficiency of individuals who are specifically working on it, 37.40% of the respondents answered that their efficiency has not been improved due to ERP implementation, whereas 58.10% of employees, replied that their efficiency has been enhanced following the implementation of ERP system. The other 4.40% of the respondents declared that they neither agreed nor disagree about the improvement of their efficiency due to the system intervention. Form the survey result, we can deduce that the deployed ERP system

has positive contribution in enhancing or improving the efficiency of employees who are doing their daily routing using the system as a major working tool, and it has also a significant contribution in achieving company vision.

Respondents are also answered in relation with the contribution of ERP in reducing non-value adding jobs/processes, 22.20% of respondents stated that the system doesn't reduce non-value adding jobs or processes. On the other hand, 61.60% of the respondents believe that ERP implementation minimizes non-value adding activities, jobs and processes as well. The other 16.30% of the respondents neither agree nor disagree on this idea. From this fact we can conclude that non-value adding processes and jobs has been minimized due to the implementation of the system hoping that more benefits will be realized if related implementation and utilization issues have been alleviated. This also fasten the completion of tasks on time and reduce redundancy of tasks

The respondents requested if there are functional areas that are still using both manual and automated working system even though ERP is already deployed, 58.60% of the respondents argued that the organization is still using both the manual and automated systems. In contrary, 30.50% of the respondents disagreed. The rest, 10.80% of the respondents chosen neither agreed nor disagreed. It can be concluded that the majority of the respondents reflected that there are some factional areas that are still using both manual and automated working system. This also double the task of the employees and create deliance of urgent report or the report may not represent the full figure and mislead top management decision.

In addition to the main question raised the respondents are asked regarding the contribution of ERP in enhancing cross-functional integration among functional units, 29.00% of respondents have agreed that the cross functional integration has not been enhanced due to ERP implementation. On contrary, 64.10% of respondents believed that the cross-functional integration among functional units has been significantly increased after ERP implementation, Moreover, 6.90% of respondents have stated that they are neither of the two sides. Form this fact, we can deduce that majority of the employees agreed that the cross-functional integration of functional units has been enhanced and this brings smooth inter departmental relationship and fasten the delivery of needed information.

4.3. Organizational Culture

Organizational culture plays an important role during implementation of ERP systems and consequently its success (Shah *et al*., 2011). According to Densley (1999) Organization who implements an ERP system has to change its business processes to the ERP best practice processes. The change both impacts on the customer's organizational culture (i.e. the ways that things are done in the organization). The implementation of ERP systems mandates changes business process and organization culture. With this the researcher raises the below questions and the respondent's reflection summarized.

Table 7. Organization Culture

No.	Statement	Scale				
		1	**2**	**3**	**4**	**5**
1.	ERP system changed the company work culture	1.5%	9.9%	5.4%	57.1%	26.1%
2.	ERP system improve information flow and streamline processes,	3.0%	4.9%	7.4%	64.5%	20.2%
3.	Employees are happy with ERP system	2.0%	4.4%	20.2%	50.7%	22.7%
4.	Organizational structure is adjusted to easily implement the system	5.4%	15.8%	26.6%	40.9%	11.3%

Source: Own Survey, 2019

Regarding the organization work culture 83.20% of respondents believed that ERP system have changed the organization work culture. On the other hand,11.40% believed that the system does not change the organization work culture. The rest 5.40% of respondents remain neutral. Therefore, we can reach on consensus that the majorities of employees believed that there is a culture change in the organization. ERP system changes the culture of organizations where many companies found hard to accomplish this successfully and we can say that ethio telecom is successful. Also, many companies identified that ERP implementation fail to accomplish the desired benefits because they underestimate the efforts involved in change management (Bhatti, 2005).

By the same manner for the question arises related with ERP system improves information flow, 84.70% of the respondents agreed that ERP system improves information system. On the other side, 7.90% of the respondents are disagreed that improvement of information system by

implementing ERP system. The remaining, 7.40% prefer to be neutral. Based on the above facts, we can say that implementation of the ERP system improves Information flow and streamline processes. Enterprise resource planning helps organizations to integrate their information flow and business processes. They typically support the different departments and functions within the organizations by using a single database that collects and stores data in real time. When ERP system is fully applied in a business organization, they can provide many benefits. Davenport, 2004

The researcher has raised a question to assess whether employees are happy with changes made on the ERP system, as a result 73.40% of the respondents are happy with the system change and 6.40% of respondent argued that they are not happy with the change made. The remaining, 20.20% of respondents preferred to be neutral. From above interpretation, the researcher can conclude that employees are happy with the change made in the organization. Organization who implements an ERP system has to change its business processes to the ERP best practice processes. Densley (1999). The change both impacts on the organizational culture (i.e. the ways that things are done in the organization). The implementation of ERP systems mandates changes business process and organization culture. Organizational culture plays an important role during implementation of ERP systems and consequently its success (Shah et al., 2011).

In above table the researcher tried to summarize the responses of employees regarding organizational structure is adjusted easily to implement ERP system. Based on their response 52.20% respondents agreed that the organizational structure is easily adjusted, where as 21.20% of the respondents disagreed. In addition, 26.60% of prefer silence. From this we can deduce that organizational structure of ethio telecom is easily adjusted in a way that makes the implementation process easy.

4.4. Concerning User Training

Appropriate training is very essential during and after the implementation of a new technology in a company. The staff should be comfortable in using the application or else, it will backfire, with redundant work and functional inefficiencies. Accordingly, the issue of training could be addressed by analyzing whether training was given, whether it is exhaustive and adequate (training availability, training exhaustiveness and training adequacy).

Table 8. Organization Training

No.	Statement	Scale				
		1	2	3	4	5
1.	Training was given exhaustively for all users	12.8%	35.00%	17.20%	30.00%	4.90%
2.	The training given on the system was adequate and useful to you.	14.8%	19.20%	35.50%	20.20%	10.30%
3.	The trainers were knowledgeable and helped me in my understanding of the system	3.90%	12.80%	15.30%	58.10%	9.90%
4.	Further enhancement training is required on the system use.	2.00%	8.40%	12.80%	50.20%	26.60%
5.	The training offered helps me to use the system easily	2.00%	3.90%	10.80%	63.50%	19.70%
6.	Employees has a capacity to use the system	3.40%	12.8%	16.70%	48.80%	18.20%

Source: Own Survey, 2019

For the question which asked employees about Training was given exhaustively for all users of ERP system, 34.90% of the respondents replied that training was given exhaustively for all users of ERP system. On the contrary, 47.80% of the respondents agreed that training was not given exhaustively for ERP system end users. The other 17.20% of the respondents are neither of the two sides. From this fact, we can deduce that training was not exhaustively given for all users of ERP system. To check the validity of the respondents a triangulated interview question raised to the selected managers and they confirmed that there is a gap on the training program to the users of ERP system and the organization change management is on the process tried to coach user to transfer knowledge. According to Welti (1999) training and change management are matters that affect all the phases of the ERP implementation. Similarly, O'Leary (2000) stresses that by saying the importance of training cannot be neglected and it 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; but the organization doesn't exhaustively exert its effort to enhance the knowledge of its employees through different means (i.e. class room training, on the job training, coaching, mentoring and so on). Therefore, in order to enhance the employee's effort towards their work performance and to make the system friendly trainings should be given exhaustively.

The researcher has raised a question about the trainings given on the ERP system are adequate and useful. As indicated in the above table, 34.00% of respondents argued that the trainings given by the organization didn't adequate and useful enough. On the other hand, 30.50% of the respondents were declared that the training given was adequate and useful. The rest 35.50% of the respondents remain neutral. Thus, it is noted that the organization still needs to work on the adequacy and usefulness of the training.

For question that the trainers were knowledgeable and helped in understanding the system, 68.00% of the respondents declared that the trainers were experienced and helped them on the understanding of the system. In contrary, 16.70% of them are disagreed. The rest, 15.30% of them are neutral. From the above fact the trainers were capable and helpful on the given training.

In addition to the adequacy and usefulness of training, employees requested if further enhancement training is required on the system, and 76.80% of the respondents believed that additional training is highly required to cop up with the detail feature of ERP system and this will benefit the organization as well as the employees. The rest, 10.40 and 12.80% of the respondents were disagreed for further training and prefer neutral respectively. It can be concluded that, the majority of the respondents believed that additional training is highly required to enable employees efficient in the system.

Regarding the training output the respondents are asked whether the training helps them to use the system easily. Based on the question, 83.20% of the respondents are agreed that the training helped them to use the system easily. Contrary to this 5.90% of the respondents disagreed that the training doesnot help them to use the system. The rest 10.80% of the respondent's answer is neutral. Therefore, we deduce that the training offered helps the employee to understand the system and use easily. In addition, the research asked the respondents that they have a capacity to understand and use the system. Based on the question, 67.00% of the respondent agreed that they have a capacity to use the system and 16.20% of the respondents disagree. The remaining 16.70% prefer to keep silent. this all figures indicates that the user interface of the system is easily understandable to work on it, hence if the employee of the company is properly supported through different capacity development programs.

4.5. Customization of the System in line with Companies / Countries Regulatory Activities.

Table 9. Customization of ERP System

No.	Statement	Scale				
		1	**2**	**3**	**4**	**5**
1.	The system is fully customized in line with the company's policy and procedure	7.90%	36.5%	27.1%	16.7%	11.8%
2.	Country's regulatory/compliance procedures are fully supported and integrated	17.2%	35.0%	28.1%	14.8%	4.9%
3.	System customization has been done considering the long-term strategic objective of the company	13.3%	31.5%	19.7%	24.6%	10.8%
4.	The company's business requirement is fully considered and integrated	1.50%	14.3%	21.2%	44.8%	18.2%

Source: Own Survey, 2019

Concerning the question which was raised about whether the ERP system is fully customized in line with the company's policy and procedure, 44.40% of the respondents said that the system doesn't fully customized in line with the company's policy and procedure. On the other side, 28.50% of the respondents argued that the system has been fully customized considering the existing company policy and procedure. The remaining 27.10% belongs to the category of neither agree nor disagree. As per the result majority of employees believe that the system has not been customized in line with the company policy and procedure but still some of the respondents agreed that the system is fully customized considering the existing company policy and procedures and we can say that the company have been forced to change some policies and procedures in order to align the system functionality and company policy and procedure.

The ERP systems must be customized to address global issues where different countries have different ways of doing business, and to incorporate country-specific business practices pertaining to accounting, tax requirements, environmental regulations, human resources, manufacturing, and currency conversion into the integrated system. Employees were asked if the countries regulatory/compliance procedure are fully supported and integrated and as a result 52.20% of the respondents replied that the countries regulatory/compliance procedures are not

fully supported and integrated. In contrary 19.70% of the respondents agreed that the countries regulatory procedures are fully integrated with the system. In addition, the remaining 28.10% of respondents are neither of the two sides. In other words, as stated the majority of the respondents the countries regulatory/compliance procedure is not fully integrated with the system as a result there might be some manual work intervention is there in this regard. Hence, from this fact, we can understand that efficiency of the company's activity has been hampered as a result of the manual work intervention due to systems incapability to support some regulatory procedures.

In the above table the researcher tried to summarize the response of employees regarding the company's long-term strategic objective concerned, 44.80% of the respondents have stated that the customization has not been done considering the long-term strategic objective of the company. but 35.40% of the respondents reflected that the company's long-term strategic objective has been considered while integrating the system and doing the customization activity. The rest 20.20% of the respondents chosen putting themselves neutral. With this result we can say that the long-term business expansion, customer base, additional employment and other related long-term strategic objectives has not been considered while integrating and customizing the ERP system.

In addition to what has been raised just before, the respondents were asked about whether the company's business requirement is fully considered and integrated, 46.3% of the respondents replied that the business requirements defined by the company are not fully considered and integrated. On the other hand, 33.60% of the respondents reflected that all the defined business requirements of the company have been fully considered and integrated with the system. The remaining 21.20% of the goes to those who belong to neither of the two sides. By this, we can say that the business requirements defined by the company has not been considered and integrated, and this is mainly due to lack of expertise from ethio telecom side to make an intensive follow up about whether the pre-defined requirements are fully integrated or not.

4.6. IT Infrastructure

IT infrastructure is explained by the availability of IT equipment to use ERP system such as computer, server, IT personnel, and system support

Table 10. IT Infrastructure

No.	Statement	Scale				
		1	2	3	4	5
1.	The company has availed computer for all users of ERP System	2.50%	21.70%	11.80%	37.90%	26.10%
2.	There is reliable intranet connection to use ERP system for day to day activities	22.20%	32.00%	10.80%	22.70%	12.30%
3.	System interruptions are fixed instantly without affecting day to day activities	10.80%	39.40%	13.30%	29.10%	7.40%
4.	It is possible to get instant support from system administrators when problem occurs in using the system	7.40%	41.90%	7.40%	32.00%	11.30%

Source: Own Survey, 2019

As indicated by Item one of the above Table 11, the researcher asked employees about the company availed computers for all users of ERP system, 64.00% of the respondents replied that the company availed computers for all users of the ERP system. On the contrary, 24.20% of the respondents believed that the company didnot availed computers for all users of ERP system. The remaining 11.80% of the respondents are neither of the two sides. From this fact, we can deduce that majority of the respondents believe that the company availed computers for users of ERP system.

Concerning the existence of reliable intranet connection to use ERP system for their day-to-day activities of the company, 54.20% of the respondents respond that there is no reliable intranet connection to do their day to day activities on the system. On the other hand, 35.00% of the respondents have agreed that there is reliable intranet connection to use ERP system for the day-to-day activities. The rest 10.80% of the respondents neither agree nor disagree. From this interpretation we can comprehend that most of the respondents agreed that they are not doing their tasks on ERP system as expected due to not having reliable intranet connection.

Regarding system interruptions are fixed instantly without affecting day to day activities, 52.20% of the respondents replied that system interruptions are not fixed instantly without affecting day to day activities. 36.50% of the respondents agreed that there is instantly fixed system interruption without affecting day to day activities. The remaining 13.30% of the respondents are

neither agree nor disagree. As a result, it is possible to say that system interruptions are not fixed instantly without affecting day to day activities of the company.

Moreover, the researcher asked the employees about possibility to get instant support from system administrators when problem occurs in using ERP system, 49.30% the respondents answered they are not getting instant support from the system administrators when problem occurs in using ERP system. Whereas 43.30% of the respondents replied that they are getting instant support from the system administrator whenever problem occurs in using ERP system. The other 7.40% of the respondents declared that they neither agreed nor disagree about the support given from system administrator when problem occurs in using ERP system. We can infer that there is enough instant support from system administrators when problem occurs in using ERP system.

4.7. Effective Communication

Based on this research Effective Communication is explained by employee's awareness about the resources available in the system, employees know about the important of the ERP system for the organization, clarity of the goal and objectives of the ERP system among the employees.

Table 11. Effective Communication

No.	Statement	Scale				
		1	2	3	4	5
1.	Employees are aware about the importance of the system for the company.	16.30%	27.10%	15.80%	29.00%	11.8%
2.	The goals and objectives for using ERP system is clear among all staffs.	18.20%	24.60%	18.20%	31.00%	7.90%
3.	The ERP system of the company provides important information	19.20%	34.00%	12.80%	26.60%	7.40%

Source: Own Survey, 2019

For the question asked about Employees are aware about the importance of the system for the company, 43.40% of the respondents answered employees are not aware about the importance of the ERP system. On the other hand, 40.80% of the respondents answered that employees are aware about the importance of the system. The rest 15.80% of the respondents declared that they

neither agreed nor disagree. We can infer that employees are not aware of the importance of the system for the company.

To strengthen the above-mentioned concept the researcher has raised a question that the goals and objectives for using ERP system is clear among all staffs, 53.20% of the respondents replied that the goals and objectives of using ERP system is not clear for all staffs. On the other hand, 34.00% of the respondents agreed that the goals and objectives for using ERP system is clear among all staffs. The rest 12.80% of the respondents declared that they neither agreed nor disagree. From the percentages of the respondents we can say that the goals and objectives of using ERP system is not clear among all staffs.

For the question the ERP system of the company provides important information, 53.20% of the respondents replied the ERP system of the company not provide important information. On the other hand, 34.00% of the respondents agreed that the ERP system of the company provides important information. The remaining12.80% of the respondents they neither agreed nor disagree on this issue. It is possible to say that the ERP system of the company does not provide important information.

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 (Dimitrios,2011). According to the result from the collected data and, ethio 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.

4.8. User Support

Table 12. User Support

No.	Statement	Scale				
		1	**2**	**3**	**4**	**5**
1.	Back office technical staffs give immediate support to users when problem occurred in the system	3.50%	25.60%	13.80%	45.80%	11.30%
2.	The ERP help desk has been well established for providing efficient end-user support	4.40%	21.70%	21.70%	45.30%	6.90%
3.	Ethio professionals are capable enough to support any system related queries	4.00%	17.70%	19.70%	51.20%	7.40%
4.	Complicated System support is dependent of the vendor.	2.50%	3.90%	21.70%	59.60%	12.30%

Source: Own Survey, 2019

Concerning the question which was raised about back office technical staffs give immediate support to users when problem occurred in the system, 29.10% of the respondents replied that no technical support is given immediately from back office when problem occurred in the system. On the contrary, 57.10% of the respondents agreed that back office staffs give immediate support when there is problem. The rest 13.80% of the respondents are neither of the two sides. From this fact, we can deduce that back office technical staffs are giving immediate support when problem is occurred in the ERP system.

For the question which asked employees about The ERP help desk has been well established for providing efficient end-user support, 26.10% of the respondents replied that the ERP help desk has not been well established for providing efficient end-user support. On the contrary, 52.20% of the respondents agreed that the ERP help desk has been well established for providing efficient end-user support. The remaining 21.70% of the respondents are neither of the two sides. From this fact, we can conclude that the ERP help desk has been well established for providing efficient end-user support.

Regarding question which asked employees about Ethio telecom professionals are capable enough to support any system related queries, 42.90% of the respondents respond that ethio professionals are not capable to support any system related queries. On the other hand, 37.40%

of the respondents have agreed that ethio professionals are capable to support any system related queries. The rest 19.70% of the respondents are neither agree nor disagree. From this interpretation, we can comprehend that ethio professionals are capable enough to support any system related queries.

Concerning Complicated System support is dependent of the vendor support, 71.90% of the respondents respond that complicated system support is dependent on the vendor. On the other hand, 6.40% of the respondents have agreed that complicated system support is not dependent on the vendor. The rest 21.70% of the respondents are neither agree nor disagree. From this interpretation we can deduce that it is difficult to say complicated system support is not dependent on the vendor regarding of using the ERP system.

4.9. Use of Consultant

ERP consultants play a critical role in ERP implementation. Consultants can be essential knowledge resources for ERP's hardware, software, and personnel. They also can help staff, have responsibility for project management, and audit the project. On the other hand, in order to be successful system maintenance after post-implementation, knowledge transfer from consultants is crucial for the organization (Thanasankit& Seddon, 2000). The researcher tried to assess the use of consultants in the successful implementation of ER system at ethio telecom.

Table 13. Use of Consultants

No.	Statement	Scale				
		1	2	3	4	5
1.	Consultants had in-depth knowledge about the system.	1.50%	10.80%	38.40%	35.50%	13.80%
2.	Consultant had involved in different stages of implementation.	2.00%	8.40%	33.00%	48.20%	8.40%
3.	Consultant had given quick response when error arose after go-live	1.50%	14.80%	35.50%	43.80%	4.40%
4.	Consultants were able to quickly respond for any problem.	2.50%	12.30%	33.00%	47.80%	4.40%

Source: Own Survey, 2019

For the question which asked employees about Consultants had in-depth knowledge about the system, 13.30% of the respondents are agreed that consultants hired at ethio telecom had no in-

depth knowledge about the system but 49.30% of the respondents reflected that the consultants has in-depth knowledge about system. The rest 38.40% of the respondents preferred to be neutral.

The researcher has raised a question about Consultant had involved in different stages of implementation, 10.40% of the respondents are confirmed that Consultant had not involved in different stages of implementation. In contrast, 56.60% of the respondents agreed that Consultant had involved in different stages of implementation. The rest 33.00% of the respondents lied neither agreed nor disagreed. We can deduce that consultant had involved in different stages of ERP system implementation in the company.

Concerning questions about consultant had given quick response when error arose after go-live, 16.30% of the respondents are agreed that Consultant are not given quick response when error arose after go-live. In the other way 48.20% of the respondents are said that Consultant had given quick response when error arose after go-live. 35.50% of the respondents remained neutral.

To strengthen the above questions, the researchers raises a question that consultants were able to quickly respond for any problem, 14.80% of the respondents respond that consultants were not able to quickly respond for any problem. On the other hand, 48.20% of the respondents have agreed that consultants were able to quickly respond for any problem. The rest 33.00% of the respondents are neither agree nor disagree.

Somers (2001) state that organisations use consultants in order to facilitate the implementation process as they may be familiar to specific industries, possess knowledge about the modules and have adequate competency in determining which suite will be a better fit for a given company. Organisations frequently use outside consultants when setting up, installing, and customising their software and the use of external parties appear to play an essential role in the initial start of the project but diminish during the latter stages of implementation when the system is running (Somers & Nelson, 2004). Finney and Corbett (2007) argue that many researchers have advocated the need to include ERP consultants as part of the implementation team. However, in doing so it is also an imperative to arrange for knowledge transfer from the consultants to the company, so it ends up decreasing the dependency for the consultant over time (Al-Mashari et al., 2003). From the system user perspective, a consultant can provide information, training and manage the overall implementation.

4.10. Top Management Commitment

Table 14. Top Management Commitment

No.	Statement	Scale				
		1	**2**	**3**	**4**	**5**
1.	ethio telecom generally understand about how ERP system is integrated into the business	1.00%	15.30%	14.30%	60.00%	9.40%
2.	ethio telecom share commitment and support with respect to ERP system activities, guidelines and policy	1.00%	9.40%	13.30%	64.00%	12.30%
3.	The effectiveness of ERP system for the whole company is periodically reviewed by ethio telecom.	5.90%	11.80%	26.60%	46.80%	8.90%
4.	Ethio telecom management always supports and encourages the use of ERP for job-related work	4.40%	13.30%	19.20%	49.30%	13.80%

Source: Own Survey, 2019

With regarding to the top management commitment employees are requested whether management team understand how the ERP system integrated into the business, 69.40% of the respondents are reflected that top management understands how ERP system is integrated into the business. To the contrary 16.30% of the respondents disagreed and 14.30% of the respondents keep neutral.

Concerning about ethio telecom share commitment and support with respect to ERP system activities, guidelines and policy, 76.30% of the respondents agreed that the company is committed and supports the ERP system activities and 10.40% of the respondents disagreed. The rest 13.30% preferred to stay neutral.

For the question which asked employees about the effectiveness of ERP system for the whole company is periodically reviewed by ethio telecom. 55.70% of the respondents agreed that the company periodically review the system whereas 17.70% of the respondents are agreed that the company doesnot review periodically. The remaining 26.60% of the respondents are reserved to agree or disagree. With this result we can say that ethio telecom periodically review the status of ERP system.

With similar fashion, the researcher has raised a question whether management members are supports and encourages the use of ERP system, 63.10% of the respondent believed that management support and encourages the use of ERP system. On contrary, 17.70% of respondents were disagreed. The remaining 19.20% of respondent preferred to stay neutral. Considering these all facts, it is possible to say that largest proportion of the employees believed that management supports and encourages the use of ERP system for job related activities.

According to Nandhakumar et al., (2005) Support of top managers 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.

4.11. Resistance to Change

For any company controlling human challenge is a big progress but most of the time most companies failed to do this. This issue also noticed by some of the below variables.

Table 15. Resistance to Change

No.	Statement	Scale				
		1	2	3	4	5
1.	Ethio telecom has faced resistance from employees because they prefer traditional methods.	11.30%	25.60%	11.80%	37.40%	13.80%
2.	ERP system too complex and make the work difficult.	26.60%	32.50%	12.30%	15.80%	13.80%

Source: Own Survey, 2019

In order to get the real challenge of ERP system the study asked whether the company faced resistance from employee with the reason that they prefer traditional methods, from the collected data concerning Ethio telecom has faced resistance from employees because they prefer traditional methods 36.80% of the respondents disagree that the company has faced resistance

from employees. In contrary 51.20% of the respondents are agreed that employees do prefers traditional methods but 11.80% of the respondents neither agree nor disagree. Even if the largest share (52.07%) of the response shows the company hast faced a problem by its staffs for choosing traditional methods of working but still to this finding (36.90%) of the respondents agrees there is no resistance.

Regarding the issue raised on whether the ERP of the company is too complex and make the work difficult majority of the respondents 58.10% disagree that ERP system too complex and make the work difficult. On the other hand, 29.60% of the respondents agreed that ERP system too complex and make the work difficult and the remaining 12.30% of the respondents are reflected neither agree nor disagree. From this we can conclude that more than 50% of the response shows disagree based on these facts the ERP of the company is not too complex and made work difficult so it can be a system in which day to day activity of the company can be done and make the work easy and more automate one.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter contains summary of findings, conclusions and recommendations that come out of the research findings and objectives. The research has generated several findings that can support the company to make some corrective action to use the system effectively and efficiently.

5.1. Summary of Findings

The study was conducted to assess the existing Practice and Challenges of Oracle ERP system at Ethio Telecom. In order to attain these, relevant data were gathered through questionnaire and interview with 203 employees at six zone of Addis Ababa working in Human Resource, Finance, Sourcing and Facility section. The data were analyzed with the help of descriptive statistics (percentage), Based on the discussion of the data, the following summaries of findings are drawn.

The gender balance of the population tending relatively to male employees. These divisions are populated with active age group this can be a benefit for the organization since they are interested to use more modernized system like ERP system. The department is populated with educated staffs more than 87% of the population have above first degree so this is a great benefit for the organization to train them about the system. The employees are combination of new entrants and existing staff this can help the organization to get benefit from both and the new entrants can share experience from the existing staffs.

The majority of the respondents confirmed that the deployed ERP system doesn't make the working process fully automated in the area it's deployed. Similarly, 48.30% of the respondents argued that there are some functional areas still using both manual and automated working system.

Most of the respondents conclude that non-value adding jobs and processes are reduced due to the implementation of the ERP system. Similarly, work efficiency of the employees is improved after the implementation of the ERP system. In addition to this the cross functional integration of the company is enhanced.

Regarding the organizational culture, 83.20% of the respondents believed that ERP system changed the organization work culture. Moreover 73.40% of the respondent are happy with the change made with ERP System.

Concerning the ERP system benefits concerning improving information flow, 84.70% of the respondents argued that the company information flow is improved. Similarly, half of the respondents are confirmed that organizational structure is adjusted to make the implementation and smooth functioning of the system.

Most of the respondents (47.80%) had responded that training wasnot given exhaustively for all users. Hence, this indicates that Ethio-telecom didnot deploy an intensive training program in order to equip those employees. Meanwhile the respondents believed proportionally that the training given was adequate and useful to make the system familiar. Additionally, 68.00% of the respondents confirmed that the trainers are knowledgeable, and their training is useful to understand the system. User training is identified by previous studies as one of the important factors for ERP implementation (Sanchez, 2007; Francoise, 2009; Bloemen et al., 2009).

Regarding further enhancement training, 76.80% of the respondents recommends that additional training is highly required to the users who are expected to work on the system as main tool. As indicated by O'Leary (2000) 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. This also will minimize the dependency on vender for complicated system problem.

Concerning customization of the system, majority of the respondents have argued that the system is not fully customized considering the companies process, policy & procedure and the countries regulatory activity, in addition most of the respondents also believe that the system implementation has not been viewed from the companies long term strategic objective like customer base, additional employment, similar system based software's to be implemented.

On the data analysis result of the respondents, the current ERP system IT infrastructure 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. More and more reliable IT infrastructure for ERP system is expected from the company for the future. Similarly, system interruption is not fixed instantly and also support

from system administrator is not as expected as per the respondent. In contrary the company fulfills the availability of computers for all ERP users.

From the respondents Communication is one of the important factors for ERP system in the day to day activities of the company. The data analysis of this research shows that most of the constructs of communication in ERP System not properly addressed and due attention is not given by ethio telecom. Insufficient communication of users' needs, goals and aspirations to the consultants may undermine the implementation of the ERP system (Dimitrios, 2011).

User support on ERP system in the day to day activities of the company factor according to the respondents data analysis result from the current study, 29.10% of the respondents believe that ethio telecom do not have immediate support from back office when problems occurred but majority of employees declared that immediate support is provided. Moreover, the majority of respondents asserted that the technical staff's capability to support any system related queries are enough but still complicated system support is dependent on vender.

Results about use of consultants showed that hired consultants had in depth knowledge and involved in different stages of system implementation. This result confirms with previous research findings Joycelyn L. Harrison, 1997 that state Consultant involvement to be influential in the implementation of ERP. Consultants can help in information system requirement analysis, risk management, business process reengineering (BPR) and also technical implementation knowledge. As a result, consultants have enormous role from beginning to end in ERP implementation success.

Concerning about human factors that company faced resistance in the implementation process, the result showed that there were many challenges in the implementation process of ERP since it was new to the organization. There is resistance from both the management as well as from the staffs this was the big challenge for the company because without commitment of human resource it is difficult for the company to adapt new system. In addition, based on the respondents for complexity of the system, the ERP of the company is not too complex and did not make the work difficult so it can be a system in which day to day activity of the company can be done and make the work easy and more automate one.

5.2. Conclusion

Based on the findings shown in point 5.1 above the following conclusions are presented by the researcher.

The collected data shows that the needed training is not exhaustively delivered to the staffs about ERP because still when problem happens the company was dependent on support. In addition, the vendors were not transferred their knowledge to the staffs at expected level. So, lack of knowledge transfer and adequate training from vendors to the staffs was one of the external factors that affects the implementation of the ERP system and also one of the big challenges. Moreover, Lack of induction training for newly joint staffs are seen as internal factors that affect the implementation.

Based on the finding, most of the employees respond that the system has not been fully customized in line with the process, policy and procedure and countries regulatory framework as well. And this also contributes a lot for the mix-up utilization of both the manual intervention of a manual working process while the system is already there. In addition, some of the customization activities have not been performed considering the long-term strategic objective of the company.

From the factors that affect the ERP system, IT infrastructure is one of the internal factors. The result of the respondents and the analysis indicated that it is difficult to say ethio telecom has developed and has accurate IT infrastructure of ERP system. There is no reliable intranet connection to do on ERP system, it takes long time to maintain the system. It is common in ethio telecom the delay of technical support from system administrator while problem occur, or it takes long process to communicate the system administrator. This significantly affects the day to day activities of the company and a threat to the company. In contrary the company has no problem in availing personal computer to all concerned employees and this is an opportunity for ERP system implementation.

User support is one of the important factors for ERP system in the day to day activities of Ethio telecom, this research indicated that most of the user support in ERP System properly addressed and due attention is given by ethio telecom for strengthen but still the result shows that complicated system problem support lies on vender.

Consultants have played a significant role in the success of the ERP implementation. The company has hired consultants who have in depth knowledge of the business and the system. The consultants have participated in different stages of ERP implementation.

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. Therefore, top management was greatly supporting its organization in ERP implementation processes by maintaining a financial plan and delegating implementation authority.

One of the problems raised by the interviewees is that after the implementation project is completed, there was no any formal and organized platform to train new employees who join departments that intensively use ERP system for their operation.

The company also faced many challenges in the implementation process of ERP since it is new to the company, there were resistance from both the management as well as from the staffs this were the big challenge for the company because without commitment of human resource it is difficult for the company to adapt new system.

The benefits that the company enjoined having ERP system within the company. Information is readily available for the proper users, all data is kept in a central repository, data redundancy is minimized, and there is a greater understanding of the overall business picture. ERP systems bring corporate business processes and data access together in an integrated way that significantly changes how they do business (work culture).

5.3. Recommendation

Based on the results and findings of the study, to improve ERP system implementation, some recommendations are suggested to be addressed by the Ethio-telecom.

- User Training is one of the important factors for ERP system in day to day activities of Ethio telecom, especially on those selected section, this research indicated that it is important predictor of organization's day to day activities, which shows that most of the constructs of user training ERP System not properly addressed and due attention

is not given by ethio telecom. Unless, all users are well trained the effectiveness of the goal and objectives of system will lose its functionality. Ethio also have an opportunity that the staffs are young and capable to understand the system. In addition, ethio should also consistently give induction training for newly joined staffs.

- From the customization pint of view, on top the standard feature of the system all the required company rules and regulation and countries regulatory procedures need to be integrated in the system through change request (customization), otherwise some operational activities will be handled through system interface and the other will require manual intervention and this will lead to inefficiency. In addition, the company need to assess all the requirements defined and point out which requirement is already integrated, and which one is not yet incorporated, then the company has to work on how the remaining business requirements can be integrated.
- This IT infrastructure significantly affects the day to day operation of the company. There for the IT infrastructure of the ERP system should be appropriately managed and emphasis should be given to build standard IT infrastructure for ERP system like the other system of the company and to keep performance of availability of computer for users of ERP system.
- Effective communication is a strong foundation of a trustworthy relationship between external consultants and organizational members. Ethio should give emphasis on creating awareness on new system and making clear the goal and objective of the system before any system deployment. The more consultants and users understand each other, the more effective the communication becomes during the consulting process.
- 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 in order to bring the required level of skills on the system. Therefore, 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 organization have to be properly identified and trained in a manner that can be fully handled the work in the departments.

- Companies should strengthen hiring competent consultant and allow them to involve in each stages of ERP implementation.
- Top management of the company should strengthen supporting the practice and any challenges faced from the very beginning and should inform and motivate employees of the company in all stages of ERP implementation.

5.4. Limitation of the Study

limitation is the static nature of the study, that is, the study is based on the existing scenario of the level and usage of ERP; but ERP can be further enhanced in future. Therefore, Research should be conducted in future to know whether ERP is improving with changing time or not within the company.

Questionnaires were not returned on time because some of the employees were too busy on their assignments and took long period to collect and some of the employees were not volunteers to fill the questionnaire because they are busy of their daily routine. As a result, the response rate is to some extent negatively affected.

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APPENDICES

Appendix - A

QUESTIONNAIRE

Dear Sir/ Madam,

I am a graduate student in the Department of general MBA at St. Mary's University. I am conducting a research study for my master's thesis on "Assessment of success factors of Enterprise Resource Planning System Implementation at Ethio Telecom" in partial fulfillment of the requirements for the Master of Business Administration.

The main purpose of this questionnaire is to gather information about the success factors of ERP (Enterprise Resources Planning) implementation in ethio telecom.

The outcome of this study will be used for academic purpose only. Therefore, your genuine response to the questions is vital for the quality and successful completion of the study. The accuracy of the information you provide highly determine the reliability of the study

I hereby request your participation in completing the questionnaire without disclosing your name, and I thank you for your cooperation and valuable time.

Sincerely,

Demisachew Zewdu

Cell Phone 0915330500

e-mail = demzewdu@gmail.com

Part I. Demographic Information: please put a "√" mark to all your responses in the box provided beside each statement.

1.1 What is your gender?

Male ☐ Female ☐

1.2. Age group

Below 25 ☐ 26-35 ☐ 36-40 ☐ 41 and Above ☐

1.3. Experience in your company,

Less than 5 years ☐ 6-10 years ☐ 11-15 years 16 and above ☐

1.4. Education background

Secondary Education ☐ College Diploma ☐

1st Degree (BA/BSC) ☐ Master and Above ☐ Other Please Specify _____

1.5. Which division you are Working in?

Human Resource ☐ Finance ☐ Sourcing, Fleet& Facility ☐

1.6. What is your position in the organization?

Staff ☐ Supervisor ☐ Manager ☐ Director ☐

Part II. Issues related to Study area

1. Do you think the deployed ERP system meets the business requirements of the company in achieving the goal of making the working process automated?

Please put **"√"** under the ratings for each description / with number that best represents your opinion/.

Where: 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

No.	Statement	Scale				
		1	2	3	4	5
1.1.	ERP implementation makes the working process of ethio telecom fully automated					
1.2.	ERP improves your efficiency in the organization					
1.3.	Non-value adding jobs and processes are reduced after ERP implementation					

1.4.	There are some functional areas still using both the manual and automated working system					
1.5.	ERP implementation enhances cross-functional integration					
2.	**Issue on Organizational Culture**					
2.1.	ERP system changed the company work culture					
2.2.	ERP system improve information flow and streamline processes,					
2.3.	Employees are happy with ERP system					
2.4.	Organizational structure is adjusted to easily implement the system					
3.	**User Training**					
3.1.	Training was given exhaustively for all users					
3.2.	The training given on the ERP system was adequate and useful to you.					
3.3.	The trainers were knowledgeable and helped me in my understanding of the system					
3.4.	Further enhancement training is required on the system use.					
3.5.	The training offered helps me to use the system easily					
3.6.	Employees has a capacity to use the system					
4.	**Issues about customization of the system in line with companies/countries regulatory activities.**					
4.1.	The system is fully customized in line with the company's policy and procedure					
4.2.	Country's regulatory/compliance procedures are fully supported and integrated (example ERCA)					
4.3.	System customization has been done considering the long-term strategic objective of the company					
4.4.	The company's business requirement is fully considered and integrated					
5.	**IT Infrastructure**					
5.1.	The company has availed computer for all users of ERP System					

5.2.	There is reliable intranet connection to use ERP system for day to day activities					
5.3.	System interruptions are fixed instantly without affecting day to day activities					
5.4.	It is possible to get instant support from system administrators when problem occurs in using the system					
6.	**Effective Communication**					
6.1.	Employees are aware about the importance of the system for the company.					
6.2.	The goals & objectives for using ERP system is clear among all staffs.					
6.3.	The ERP system of the company provides important information					
7.	**User Support**					
7.1.	Back office technical staffs give immediate support to users when problem occurred in the system					
7.2.	The ERP help desk has been well established for providing efficient end-user support					
7.3.	Ethio professionals are capable enough to support any system related queries					
7.4.	Complicated System support is dependent of the vendor.					
8.	**Use of Consultants**					
8.1.	Consultants had in-depth knowledge about the system.					
8.2.	Consultant had involved in different stages of implementation.					
8.3.	Consultant had given quick response when error arose after go-live					
8.4.	Consultants were able to quickly respond for any problem.					
9.	**Top Management Commitment**					
9.1.	ethio telecom generally understand about how ERP system is integrated into the business					
9.2.	ethio telecom share commitment and support with respect to ERP system activities, guidelines and policy					

9.3.	The effectiveness of ERP system for the whole company is periodically reviewed by ethio telecom.					
9.4.	Ethio telecom management always supports and encourages the use of ERP for job-related work					
10.	**Resistance to Change (Implementation of ERP System)**					
10.1.	Ethio telecom has faced resistance from employees because they prefer traditional methods.					
10.2.	ERP system too complex and make the work difficult.					

If there are any other issues that you observed in relation to the existing Practice and challenges of ERP system, please write down here:

_____

_____

_____

_____

Appendix - B

ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Interview questions

2. What factors were key to implementing the ERP successfully?
3. Does the ERP system meet its anticipated objectives?
4. Top Management support is consistently available to employees in solving problems encountered while implementing ERP system?
5. What are the Major challenges faced related to ERP Practice?
6. Can you explain the implication and/or organizational changes arising from ERP Adoption in your organization? Like change in decision making
7. What are the major benefits the organization gets from implementing ERP system?
8. Are there any other issues concerning ERP implementation that have not been covered in this interview and that you wish to bring to our attention?