



**ST. MARY'S UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**ASSESSMENT OF ENTERPRISE RESOURCE PLANNING (ERP)
IMPLEMENTATION: IN THE CASE OF IE NETWORK
SOLUTIONS PLC, ETHIOPIA**

BY: MAHELET DENDIR

**DECEMBER, 2019
ADDIS ABABA, ETHIOPIA**

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of my advisor ZemenuAynaddis (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
December, 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.

Advisor

Signature

St. Mary's University, Addis Ababa
December, 2019

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List of Abbreviations and Acronyms

BPR	Business Process Re-engineering
CAD	Computer Aided Design
CRM	Customer Relationship Management
CSF	Critical Success Factors
ERP	Enterprise Resource Planning
HR	Human Resource
ICT	Information and Communication Technologies
IS	Information Systems
IT	Information Technology
LLC	Limited Liability Company
Ltd	Limited
MRP	Materials Requirement Planning
PLC	Private Limited Company
Pvt	Private
ROI	Return on Investment
SCM	Supply Chain Management
SMB	Small and Medium Business

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ABSTRACT

As worldwide globalization increases, the need for seamless information flow is intensified. Enterprises of the 21st century utilize an enterprise resource planning (ERP) system to coordinate the information flows both internally and externally. However, implementing an ERP system is complex and costly. As ERP implementation affects entire organizations process, people, and culture, there are a number of challenges that companies may encounter in implementing ERP systems. The primary purpose of this study is to assess the practices and challenges of ERP implementation. The study was conducted using descriptive research design. A well-structured self-administered questionnaire was used as the main tool for data collection and was administered to 75 respondents, out of which 70 were retrieved. The quantitative data was analyzed using descriptive statistical tools. The findings were described using frequency and percentage and presented using pie chart and tables. The findings of the study revealed that ERP system implementation will be impossible to succeed if clear objectives are not set that justify the reason to implement the system. In addition, the study revealed that ERP implementation success highly depend on the quality of the software used, the effectiveness of training conducted to prepare system users and the management support. The study concluded that ERP allows different departments with diverse needs to communicate with each other by sharing the same information in a single system. ERP thus increases cooperation and interaction between all business units in an organization. Finally, the study recommended that organizations need to document the anticipated objectives and requirements before the actual implementation of ERP system starts also they should provide a regular supervision and trainings to ensure employees have the necessary skills that deemed important in order to be able to manipulate and take advantage of the ERP system.

Key Words: Enterprise Resource Planning (ERP), Implementation, Management support, System users

Chapter One

Introduction

1.1 Background of the study

The explosive growth of Information and Communication Technologies (ICTs) has influenced, to a great extent, the way modern organizations operate in the business environment. The amount of information in organizations is increasing a great deal and managing and sharing information efficiently inside the organization has become important. Companies have to be swift in adopting new technology in order to remain competitive in a continuously developing business environment. Companies and other organizations are investing to introduce information systems (IS) hoping this will make business more efficient and information sharing smooth. An information system is defined as a set of information resources used to collect, store, process, maintain, use, share, disseminate, dispose, display, or transmit information (Committee on National Security Systems, 2006). And similarly Wognum et al., (2004) note that information systems purpose is to support companies in their information needs. Examples of such information systems investigated in this research is ERP systems.

ERP is an acronym for Enterprise Resource Planning. In order to understand the benefits Enterprise Resource Planning brings to a company, one needs to take a step back and think about all of the various processes that are essential to running a business, including accounting and finance, human resources, customer relationship management (CRM), and more. At its most basic level, ERP software integrates these various functions into one complete system to streamline processes and information across the entire organization (Mohsen Koolaji, 2018).

The main feature of all ERP systems is a shared database that supports multiple functions used by different business units. In practice, this means that employees in different department can rely on the same information for their specific needs (Vishal Bishnoi, 2011).

This research adopts a descriptive research design to assess the practice and challenges of ERP implementation in IE Network Solutions PLC.

1.2 Statement of the problem

ERP systems have emerged as the core of successful information management, and the enterprise backbone of the organization(Nash, 2000a, b). A successful ERP system will simplify processes within a company and improve its overall effectiveness, while providing a means to externally enhance competitive performance, increase interaction with customers, and support strategic initiatives (Sandoe et al., 2001). Despite such advantages, ERP implementation is overwhelmingly seen as an IT project which is incorrect as it requires a balanced perspective where the organization as a total system is considered(Al-Mudimigh et al., 2001). This research study was motivated because of the increasing adoption rate of ERP systems in organizations in Ethiopia despite continued occurrence of ERP implementation failures

Organizations around the world have been implementing ERP systems since the 1990s to have a uniform information system in their respective organizations and to re-engineer their business processes (Rajagopal, 2002). ERP system implementation process involves a wide range of complicated resources and issues. With no plan or supporting procedure, companies may spend a lot of money, resource, and time on ERP implementation but not enjoy the benefit ERP system should have brought out. A successfully implemented ERP system has the advantages of reduced cost and high system quality. It can also yield benefits to its customers not only because they can purchase products or goods at low prices resulting from the cost savings but also because they share the data of the production line in real time. The benefit of ERP systems is highly dependent on the success of its implementation. In order to get the best out of ERP system the implementation must be managed as a series of wide ranging organizational change initiative rather than as a software installation effort (Huang and Palvia, 2001).

More than 90% of ERP implementations have been delayed and required additional budget due to numerous changes in the original plan(Wang and Chen, 2006). It is usually impossible to cancel the effort even when a company realizes that its ERP implementation is not going to be

successful (Bingi, Sharma and Godla, 1999). Such IT driven projects require change of the organization's social and economic system(Hong and Kim, 2002).

A number of studies have been undertaken in relation to implementation of Enterprise Resource Planning System. For instance, Al-Mashari (2013) looked at Enterprise Resource Planning (ERP) System Implementation: A case for User participation. One of his conclusions is that most ERP systems are not built but adopted and thus they involve a mix of business process re-engineering (BPR) and package customization; and ERP implementation is not just a technical exercise but it is a socio-technical challenge as it poses new set of management procedures. Goeun (2013) looked at Challenges in Implementing Enterprise Resource Planning (ERP) system in Large Organizations: Similarities and Differences between Corporate and University Environment. He found out that both corporate sector organizations and universities are seeking the operations benefits of ERP systems as identified in the literature, including much easier access to reliable information by integrating disparate legacy systems and re-engineered business processes.

Similarly, a study made by AbiotSinamoBoltena (2012) entitled a successful ERP implementation in Mesfine Industrial Engineering Pvt. Ltd. The main technical problems that MIE has encountered have been with the accuracy of data. The new system requires the retrieval of old data from the legacy systems that has to be normalized, screened and stored in a sensible data format within the new systems data repository.

Studies on the practices and challenges of implementation of the ERP system are not systematically documented at IE Network Solutions. Guided by this knowledge gap, the researcher intends to fill this void by seeking to assess the practice of the implementation of ERP and its challenges.

1.3. Research Questions

Below listed are the specific research questions.

- What is employee's opinion about the ERP software quality and simplicity?
- How effective was the training to prepare users?
- Did the ERP system meet its anticipated objective?
- What are the major challenges associated with the ERP system implementation?
- Did the management support implementation of the system and its users?

1.4. Objectives of the Study

1.4.1 General Objective

The general objective of this research is to assess the existing practices and challenges of ERP system implementation at IE Network Solutions.

1.4.2. Specific Objective

- a) To know employee's opinion about the ERP software quality and simplicity.
- b) To assess the effectiveness of the training conducted to prepare users.
- c) To assess whether the ERP system meet its anticipated objective or not.
- d) To identify the major challenges associated with the ERP implementation
- e) To determine management support in regards to the ERP implementation.

1.5. Scope and Limitation of the study

1.5.1. Scope of the study

This study covers the practices and challenges of implementing an ERP system and the perception of ERP system uses. An ERP system user is defined as an employee working actively within an ERP system on a day-to-day basis. The scope of the study is geographically delimited to Addis Ababa, Ethiopia as the company where the research took place is located in Addis Ababa.

1.5.2 Limitation of the study

The major limitation of the study was the inability to obtain full cooperation from respondents of the questionnaire. The researcher also observed the respondents lack of attention while filling questionnaires. This was because of the busy schedule of IE Networks staff especially management and senior staff. In addition to these all findings are drawn based on respondent's personal judgment.

1.6. Significance of the study

The research may contribute to the adoption of ERP systems in different companies in Ethiopia by providing information on the important factors that drives the adoption of ERP system. The research may also provide information to the managers of different organizations to avoid problems that would arise during ERP implementation project.

The findings of this study may help companies similar to IE Network Solutions in Ethiopia to understand the staff opinion about the ERP implementation process, the system characteristics, and top management characteristics and how to improve the relationship between these factors on the adoption of ERP information systems. The information generated in this study may also enable various stakeholders to come up with good plans and formulate policies that may favor adoption of ERP information systems in various fields. It is also expected that the findings of this study may be used to improve the management process and that the findings can also be applied in areas that are yet to be computerized.

1.7. Organization of the study

The study will be organized in five chapters. The first chapter will include background of the study, statement of the problems, objectives of the study, significance of the study, scope of the study, organization of the study and research design and methodology. In the second chapter literature review will be viewed that have relation to the subject matter under study and different empirical literatures. The third chapter deals with in-depth presentation of research design and

methodology, in this part research design will be discussed; population, sample size and sampling techniques will be present. The forth chapter will be the results and discussion from respondents. The last chapter will includes summary of major findings, conclusion and recommendation part. Finally the references and appendixes will be attached at the end of the research paper.

Chapter Two

Review of Related Literature

2.1 Theoretical Literature

2.1.1 What is Enterprise Resource Planning?

Enterprise resource planning (ERP) is a business process management software that organizations use to manage day-to-day business activities such as accounting, finance, procurement, project management, and human resource. Enterprise Resource Planning (ERP) can also be defined as a type of software that allows organizations to use a system of integrated applications to manage the business and automate functions related to technology, services and human resources. ERP software is software designed to be used by larger businesses and requires dedicated teams to customize into specific organizational needs, analyze the data and to handle upgrades and deployment. ERP is a platform that you can rely on where you access any type of data in real time. It means that any updates and changes are available in a moment after they have been finished (Vangie Beal, 2019).

Enterprise Resource Planning (ERP) software integrates all functional areas of business, including sales, logistics, billing, production, inventory management, quality management, and human resources management into one organization-wide system. Enterprise Resource Planning systems are some of the most important development in the application of information technology in the business world. Enterprise Resource Planning software serves as the information backbone to the core business processes of an organization. Companies have understood the importance of Enterprise Resource Planning software and hence more and more companies are implementing the software, making it one of the fastest growing segments of the application software market. Nowadays every aspect in modern organization relies heavily on information to survive, information system serves as the lifeline to the organizations, and organizations are using ERP for gaining competitive edge in all functional areas. ERP is a single software program that serves the needs of firm in all functional areas of an organization. Each

department in a company typically has their own computer system optimized for the particular requirement of the department and ERP combines them all together into single, integrated software program that runs on a single database so that the various departments can easily share information and communicate with each other (Vishal Bishnoi, 2011).

ERP software is one of largest expenditure of corporate information technology (IT) budgets (Cissna, 19985 and Somers and Nelson, 2001). The core idea of implementing an ERP solution is to get tangible business benefits that would improve the performance of the organization and achieve certain business objectives. This includes inventory reduction, less time to market, reduce manufacturing and order processing cycle times, etc.(Vishal Bishnoi, 2011).

Most organizations implement ERP systems to replace legacy software or to integrate ERP applications. According to a study done in 2016 by Panorama Consulting Solutions, LLC., organizations implement ERP for the following reasons: to replace out-of-date ERP software (49%), to replace homegrown systems (16%), to replace accounting software (15%) and to replace other non-ERP systems / had no system (20%).

2.1.2 ERP System Evolution

The business word is not new to the concept of Enterprise Resource Planning. The functions that ERP systems perform are basically the same business functions that organizations have performed for decades. The focus of manufacturing systems in the 1960's was on inventory control. Most of the software packages then were customized to handle inventory based on traditional inventory concepts. (Md. ItratHossainJubery, 2017).

In the 1970s the next generation of business software i.e. Materials Requirement Planning (MRP) was introduced. MRP systems were focused on demand based planning of production and inventory control and the purpose was to guide purchasing activity and to automate the creation of purchase orders (JaakkoKotiranta, 2012). MRPs attempted to minimize inventory levels while ensuring adequate materials for the production process (JaakkoKotiranta, 2012).

In the 1980's the concept of MRP-II evolved which was an extension of MRP. This system focused on quality and had the ability to schedule and monitors the implementation of production plans. Later on, MRP-II systems' focus shifted more towards fulfilling customer needs and the ability to adapt production schedules to meet specific customer needs on timely basis. MRP II systems continued leading the way towards integrated business systems by including software for financial accounting, project management and human resource management departments in addition to the original operation of production (Sumner 2005; Kettunen and Simons 2001).

By the mid-1900s, ERP concept developed. ERP systems integrated information flows within a company. Today companies all around the world are using ERP systems to improve their efficiency and decision-making (Sumner 2005).

2.1.3 Major Modules of ERP Software

There are many vendors in the market which are providing traditional ERP solutions or Cloud-based ERP solutions. The common & basic modules of ERP can be found in any ERP System although implementation platforms or technologies may differ. Depending on organizations need required components are integrated & customized to form the ERP system (ESDS, 2013). Some of the basic ERP system modules are discussed below.

a. Accounting Module

The ERP accounting module is designed to automate general accounting operations, providing flexibility and effectiveness to both SMBs (small and medium businesses) and to large enterprises with more complex activities. Any successful ERP implementation begins and ends with efficient accounting software. From the initial launch process of establishing general ledger entries, account numbers through the final accounts statements and financial statements is the core of any enterprise. A quality ERP package with strong accounting software functionality that is both flexible and easy to use is a great support. Within an ERP system, the accounting software modules manage the recording and processing of accounting transactions within functional areas such as accounts payable, accounts receivable, and payroll. These functional areas and their corresponding sub ledgers feed transactions into the general ledger from where

financial reports are generated for management and external stakeholders. In addition to transaction and function, it ultimately helps to validate the general ledger for final review and analysis. Therefore, ERP solution implementation with accounting software module is vital to the project's overall success(Vishal Bishnoi, 2011).

b. Customer Relationship Management (CRM) Module

Customer Relationship Management department is important to boost the sales performance of an organization through better customer service & establishing a healthy relationship with customers. CRM module in ERP system will store details of the customer and helps to manage & track detailed information of the customer like communication history, calls, meetings, details of purchases made by the customer, contract duration etc. (ESDS, 2013). CRM module can also be integrated with the Sales module to enhance sales opportunities.

CRM software module supports front office operations and the customer service, sales, and marketing functions. CRM software is becoming a primary component of ERP in recent years; it is also available as stand-alone software packages. Fully integrated module of CRM found in higher end ERP systems with other ERP modules such as manufacturing, warehousing, and purchasing enables real-time access to data that help by enhancing the marketing efforts. CRM software functions assist in activities such as quoting, support call management by providing more a comprehensive data set to allow the sales and marketing team to behave in a more predictable and proactive manner. This integrated approach to CRM software will assist organizations in delivering high levels of customer service and ultimate customer satisfaction(Vishal Bishnoi, 2011).

c. Financial Management Module

The financial module of Enterprise resource planning gathers financial data from various functional departments and generates valuable financial reports. It is a software platform that collects information and crafts reports: general ledgers, fixed assets, receivables, payables, cash flows, etc. (IrynaSkvoznikova,2019). A financial module of an ERP system gives any business

the tools for tracking all the data within one or several companies, transactions, languages, and currencies.

ERP is a powerful solution for managing the financial part of the business and integrating with other units. This module of the ERP software will take care of all accounts related entries and their impact on the whole system. How finance comes and how it is been utilized. The total flow of money and total expenditures will be reflected here. Organizations can integrate the financial module with production, sales, shipping, management, etc. All transactions are available from any device and in any location. No handwork and no mistakes in making the calculations. Complete transparency and everlasting records of the transactions make a financial module a valuable tool(IrynaSkvoznikova,2019).

A quality Enterprise Resource Planning software solution will include strong financial management module that is fully integrated with the organization's core functional areas. In most ERP systems, the transactional data generated from different departments can be available for immediate review via online inquiries, ad hoc reports, and real-time dashboard data. These capabilities offer full financial visibility into the organization's payables and receivables with up-to-date access to inventory levels and sales forecasts. As a result of this transparency, accounting personnel and the executive staff will get real-time financial data that helps facilitate quick, yet highly informed business decisions. The financial management software found in ERP system should support full audit capabilities to provide complete backwards and forward traceability to each and every transaction(Vishal Bishnoi, 2011).

d. Human Resources Management Module

Human Resource is another widely implemented ERP module. ERP HR module streamlines the management of human resources and human capital. An organization's most valuable resource is its workforce. The HR module is critical as it manages the complexities of talent, payroll, and government regulations(Jonathan Wiersma, 2019).Enterprise Resource Planning system that can effectively manage the day-to-day operations, as well as the needs of the human resources

department, is important for an Enterprise Resource Planning project's overall success and ultimate Return on Investment (ROI).

HR modules regularly maintain a complete employee database including contact information, salary details, attendance, performance evaluation and promotion of all employees. Strong human resource management module will keep employee data in a secure manner, while also providing quick access to the employee's complete employment information(V K Jain, 2009).

Sub modules of ERP HR module include organizational management which enables analyzing the complete organizational structure, E-Recruitment for hiring both internal employees and external candidates, time management that has a functionality to record attendance and absence of employees, personal administration that manages numerous individual pieces of information, payroll that consists of payments for each employee and deductions made, and reporting which provide reports of individual employees and combined reports across departments, demographics(AniruddhParmar, 2019).

e. Inventory Management Module

The Inventory Management Module functionality is a critical component of ERP software solutions as the inventory control module interacts practically with many other module of functional area. Inventory module includes functionalities like inventory control, master units, stock utilization reporting etc. One of the uses of Inventory modules is to track the stock of items. The items can be identified by unique serial numbers which the inventory system traces to get its current location in the organization(Vishal Bishnoi, 2011).

The inventory management module include information from the purchase order to sales order entry through purchasing and receiving to shipping and ultimate invoicing. This module can be integrated to any other modules in the ERP system and the information can be accessed easily by ERP users(Vishal Bishnoi, 2011).

f. Supply Chain Management (SCM) Module

The Supply chain management module manages the flow of product items from manufacturer to consumer & vice versa. This module supports the management and movement of products starting from the beginning i.e. raw materials through the work-in-process inventory and finally to finished goods. This means SCM module information contains flow of products from a given point of origin to the ultimate point of consumption. These supply chain activities help build the backbone of the organization's cost structure and ultimate profitability(Van Jaarsveld, Heyns&Kilbourn, 2013).

Organizations that have shifted their operations to include more importing of goods are forced to reconsider their existing supply chain management software functionality and evaluate the strength of their existing ERP software or legacy systems. In doing so, organization begin to expand their usage of supply chain management software and rely on ERP solutions to control all aspects of distribution requirements planning, purchasing, import management, containerization tracking, supplier relationship management, and controlling the movement of goods between their internal warehouses and distribution centers. The most robust of ERP systems will help tackle supply chain management issues, reduce supplier lead-times, and control inventory while also delivering the highest level of sales order and line fill-rates for the end user customer or value added distributors(Vishal Bishnoi, 2011).

g. Sales & Marketing Module

In the context of growing market competition, organizations are focusing more on closer partnership across supply chain. Increasing efficiency in sales and distribution process facilitates an organization to maintain its competitive edge. ERP Sales and Marketing module provides functionalities such as sales order, order scheduling, shipping with delivery note, tracking sales invoices and sales returns. The important components of sales modules are sales inquiry handling, sales pricing control, contract handling, sales order control and invoicing.

Sales module is a highly integrated execution module. It draws most of its input from Inventory module for verifying available and projected stock. It also draws input from production module for production schedules and lead time of delivery, from purchasing module for generation of direct delivery purchase order, from warehousing module for issuing order and shipment and from accounts receivable module where sales invoices are recorded(AniruddhParmar, 2019).

h. Production/ Manufacturing Module

The function of the ERP manufacturing module is to complete the inventory management work that is detailed above by implementing the operations specific to an efficient manufacturing process. This module is used to design the detail production process that must be followed to convert raw materials to finished goods. The features of production module vary based on the manufacturing product and the production process utilized. For this module to be used productively, understanding the organization's production environment and matching the operational flow to an ERP software package with the proper manufacturing software functionality is critical(Kim O'Shaughnessy, 2019).

2.1.4 Operational Benefits of ERP Systems

The most important advantage of an ERP system is the integration of information throughout an organization, which can result in improved operating performance, cost reduction and inventory reduction(S. Sadrzadehrafiei, 2013). Below is a list of common ERP benefits from a business point of view.

- **Time and cost reduction of business processes:** Although ERP is often a large investment; it can unify IT costs and improve efficiency. In legacy software, organizations spend resources on multiple systems that all need dedicated staff, infrastructure, support teams and licenses. When using ERP organizations can focus all these costs into one system. ERP eliminates repetitive manual processes; as a result employees can focus on tasks that will increase the company's revenue(S. Sadrzadehrafiei, 2013).

- **Faster transaction processing using common data:** ERP allows total access to every important process in a business by making data from every department easily accessible to all users.
- **Improved operational performance:** ERP can reduce the time and effort required by a team to carry out their daily activities. Properly implemented, ERP system can greatly reduce or eliminate repetitive manual processes, thus freeing up team members to focus on revenue-affecting tasks(AditiDutt, 2020).
- **Enhanced reporting:** Implementing an ERP system means having a single, unified reporting system for every process. By having a single source, an ERP system can readily generate useful reports at any time(AditiDutt, 2020). It brings the ability to analyze and compare functions across departments, without the hassle of multiple spreadsheets and emails.
- **Consistent business processes conforming “best practices”:** The system can aid in the adoption and enforcement of industry best-practice processes, aligning all actions across the enterprise(Kim O'Shaughnessy, 2019).
- **Improved financial management:**Maintaining perfect accuracy in financial records isn't exactly easy, but needs to be done nevertheless(Kim O'Shaughnessy, 2019). ERP achieves this accuracy level while making the finance team efficient.
- **Improved customer service:** Besides the company itself, clients will gain benefits from ERP implementation. Client information is centralized and streamlined in the ERP system therefore the Sales team will be able to focus on building and maintaining customer relationships rather than wasting time trying to manage spreadsheets.
- **Enhanced organizational communications:** since data is obtained transparently, all departments in an organization can communicate easily in a single platform. This leads to improved availability of information for planning, control and decision making.

The success of an ERP system is completely dependable on how the workers utilize it. Even the best systems will not be beneficial without timely input of accurate information by their users. (Exforsys 2009) All of the benefits of an ERP system may be difficult to measure as most of the advantages emerge long time after the initial implementation.

2.1.5 ERP Disadvantages

Although ERP systems can be very advantageous for the organizations using them, the systems are expensive investments that are often associated with many problems. There are numerous stories about failed ERP implementations and that they are complex systems that are difficult to use. There are disadvantages associated with ERP solutions themselves besides the problems regarding the ERP implementation process, the biggest downside to ERP systems is the high costs of the technology (Exforsys 2009). The total costs of the implementation project can be very high and more often than not, ERP projects are late or over budget (Sumner 2005: 13). The costs associated with ERP i.e. the license fee, implementation fee and consulting expenses can add to make it a very expensive undertaking for big companies. Comparatively, the costs of ERP implementation for a small and medium-sized company are lower than for large companies. But nevertheless, the costs are substantial for any company adopting an ERP. Even after the costly implementation, the systems are often expensive to maintain. (Parthasarthy 2007: 5).

As mentioned above ERP systems often come with “best practice” business standards that mean organizations need to change their practices to better fit the new system, which typically creates resistance from workers. The resistance could arise from some of employee’s fear of being downsized as the system reduces the need of manual labor. The resistance to change has been identified as a considerable reason for the failure of information systems implementations and therefore it is an issue that needs to be understood and managed (Hee-Woong and Kankanhalli 2009). The other major problem with ERP is that it is often difficult to customize to specific company’s needs. It is almost impossible to use ERP system right out of the box as it needs to be customized to suit organizations’ needs. Customizing can include both configuring and modifying the system. Especially modification, which is done by changing the code of the software, can be very expensive. According to Exforsys, 2009; ERP systems are also often seen as too rigid and difficult to adapt to specific workflow and business processes of certain companies.

2.1.6 Selection of ERP

The decision concerning the selection of an ERP system is crucial, by choosing a certain ERP, the company makes a commitment to the practices and procedures that this specific ERP system supports. The company needs to keep their own interests in mind and demand the best possible service from the vendor. (Kouri and Vilpola 2006: 13-16). It is quite complicated to know exactly what kind of a system would be the most suitable for a certain company, therefore it is very important to pay careful attention to the company's processes and needs and to make sure the features of the software to be selected addresses this needs.

In the selection stage, organizations should consider hiring consultants with industry experience who can help throughout the process so that the company gets the most from the ERP system. The hired consulting team may also help in selecting the modules that are best suited to the company's operation. Evaluation of the right ERP package involves checking weather all functional aspects of the business are considered and business processes are fully integrated. It also involves making sure all the latest IT trends are covered, checking if the software has customization possibilities, checking whether the business can absorb the costs and making sure the return on investment (ROI) is optimum.

2.1.7 ERP System Implementation

Implementation is traditionally related to installation of hardware and software. In the case of ERP systems, implementation is used as a term to describe the whole project spanning from the preliminary project planning through configuration of the system and training until the system is in use. It is a continuous learning cycle where the organizational processes supported by the ERP are gradually aligned with the business objectives (Parthasarthy 2007: 35).

For better understanding of ERP implementation, a number of researchers (Ehie and Madsen ,2005; Oliveira and Martins, 2011; Rabaa'i2009; Oliveira and Martins, 2011) have developed a step by step process to ensure time and resources are invested only in a successful implementation. This step by step process is discussed in detail below.

1. **Define organizations need:** In this stage, managers must conduct a feasibility study of the existing problems and needs of the company by analyzing the availability of hardware, software, databases and expertise to make an informed decision to implement the ERP system. They must set goals, establish objective of the project and calculate the benefits or return on investment (ROI) that will be gained from this expensive investment.
2. **Recruit user involvement:** This stage involves recruiting and educating users to be involved throughout the implementation process.
3. **Assembling project team:** Managers will assemble a project team that consists of experts from all functional areas to lead the project.
4. **Software selection:** As mentioned in above, after a decision is made to implement ERP, a team of consultants must be hired to help select the ERP vendor and the best approach to implementing ERP. The consulting team may also help in selecting the modules that are best suited to the company's operation.
5. **Pre-implementation training:** Before the system is implemented adequate training must be provided to all business stakeholders that include managers, end users, and customers. These trainings are often customized and provided by either internal or outside trainers.
6. **System Implementation:**The implementation involves installing the software, moving the companies' data (data migration) over to the new system then configuring users and processes. The system installation process should address issues such as software configuration, hardware configuration and software testing. A post implementation review is recommended to ensure that all business objectives established during the planning phase are achieved.
7. **Technology and knowledge transfer:**Training is the most important aspect of the ERP software implementation process. Proper use of technology and an effective knowledge transfer, along with proper training should be considered since the users are the parties responsible for the entire project's success.
8. **Ongoing support:**An ERP solution is not a one-time event, but rather a continuous process. It is something that the company has to continuously keep monitoring to avoid any problems which could affect the ERP software functionality. Managers should make

sure to provide regular upgrades and maintenance to make sure the functionality of the system is not compromised.

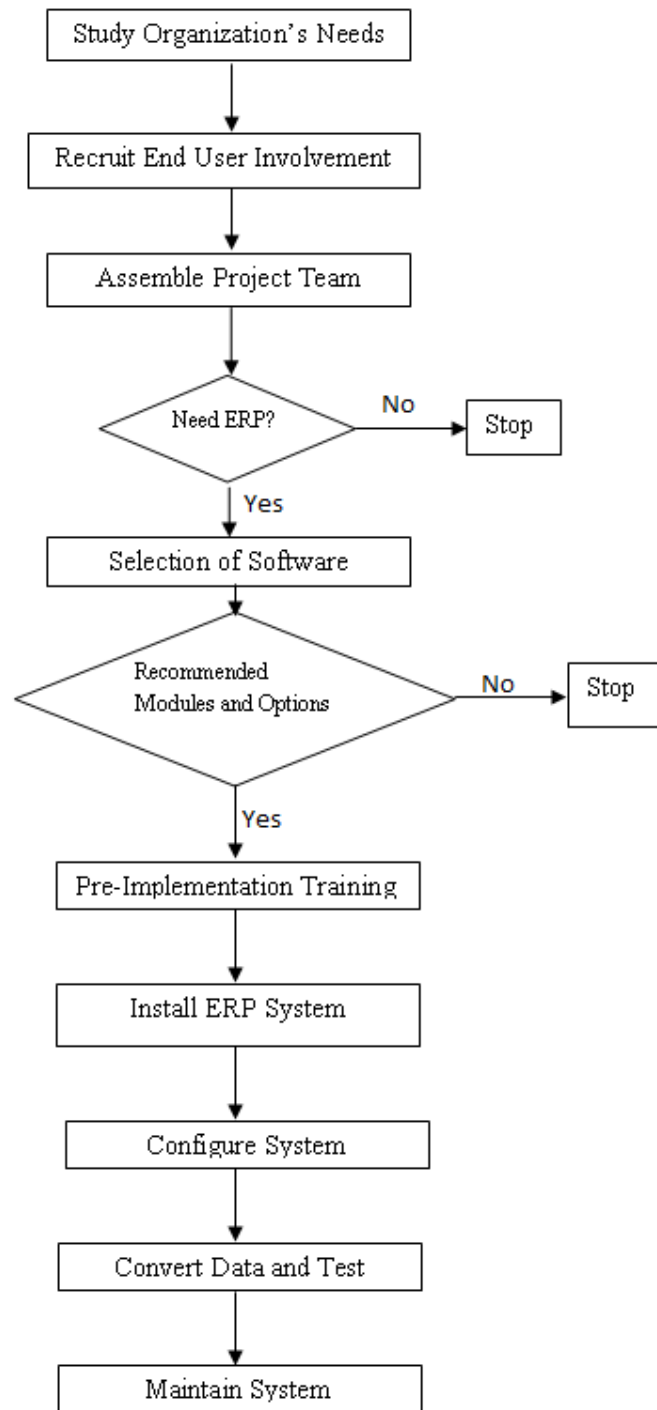


Figure 2.1 Flow chart of ERP Implementation

Source: Prof. Pramod Kumar, Successful implementation of ERP in a Large Organization, 2010

An ERP implementation project is always a business development project, which aims to enhance the company's operational performance and therefore business-related goals and objectives should be set for the project. An organization implementing an ERP system should have a clear vision of why it is embarking on this project and what are the businesses objectives that it wants to reach by utilizing the system. Careful planning can significantly affect the success of the implementation project and the reaching of objectives(Kouri and Vilpola, 2006).

2.1.8 Challenges in ERP Implementation

Implementing an ERP causes massive change that needs to be carefully managed to harvest the benefits of the system. Some of the challenges organizations faces during ERP implementation are discussed below.

- **Selection process:** There are a vast number of ERP systems available, so it is can be confusing choosing which one to invest in or what is best for the business (Jonathan Davies, 2019).While selecting the perfect ERP application for a business, one should know the vendor's previous projects, industry vertical and experience.
- **Commitment from managers:** Lack of Support from Senior Management will lead to unnecessary frustrations in work place. It is essential to ensure that the Senior Management supports the transformation, if this is not the case it will cause delay in operations and ineffective decisions (Jonathan Davies, 2019).
- **System training:** The ERP system will only ever be as good as those who are using it. The successful implementation of ERP system will be much more achievable if managers offer employees full training and ensure they are motivated to use the system (Bajwa et al., 2014).
- **Proper Project Management:** Companies need to assign expertise that is a combination of external consulting team and internal employees for successful implementation. It is important to include external help that are experienced in ERP implementation alongside the employees as the project is usually vast and bulky (Mehrjerdi, 2010).
- **Resistance to change:**This is the most difficult type of issue to resolve and is one of the main reasons for ERP implementation failures. It is important to remember that the success of the implementation of a software system depends mainly upon the users. Some

employees across the organization and across all levels may have established themselves as point of reference in current set up. They may be architects of the current processes or systems in use and thus fear that their influence will disappear with the new change (Jonathan Davies, 2019).

2.2. Empirical Literature

ERP implementations are known to be reputedly unsuccessful in the business world because so many organizations have had major problems with them. According to Parthasarthy 2007: 35, it seems to be almost an accepted fact that these projects never are on time, within the budget, and meeting the desired business outcome. The failure rates of ERP implementation projects vary from study to study, but the percentage of ERP implementations that can be classified as “failures” ranges from 40% to 60% or even higher. These failures have been known to result in problems as serious as organizational bankruptcy.

According to a study made by AbiotSinamoBoltena (2012) entitled a successful ERP implementation in an Ethiopian company: A case study of ERP Implementation in Mesfine Industrial Engineering Pvt. Ltd. The main technical problems that MIE has encountered have been with the accuracy of data. The new system requires the retrieval of old data from the legacy systems that has to be normalized, screened and stored in a sensible data format within the new systems data repository. The duplication of data was a major concern that MIE had to address. In some special areas the old systems were kept running until such time as they could be phased out by the new systems, and to do this the IT department built interfaces between the systems. The CAD system used by MIE remained the same, as the process to alter the file formats would be too expensive and require use of valuable resources that are needed for the core implementation.

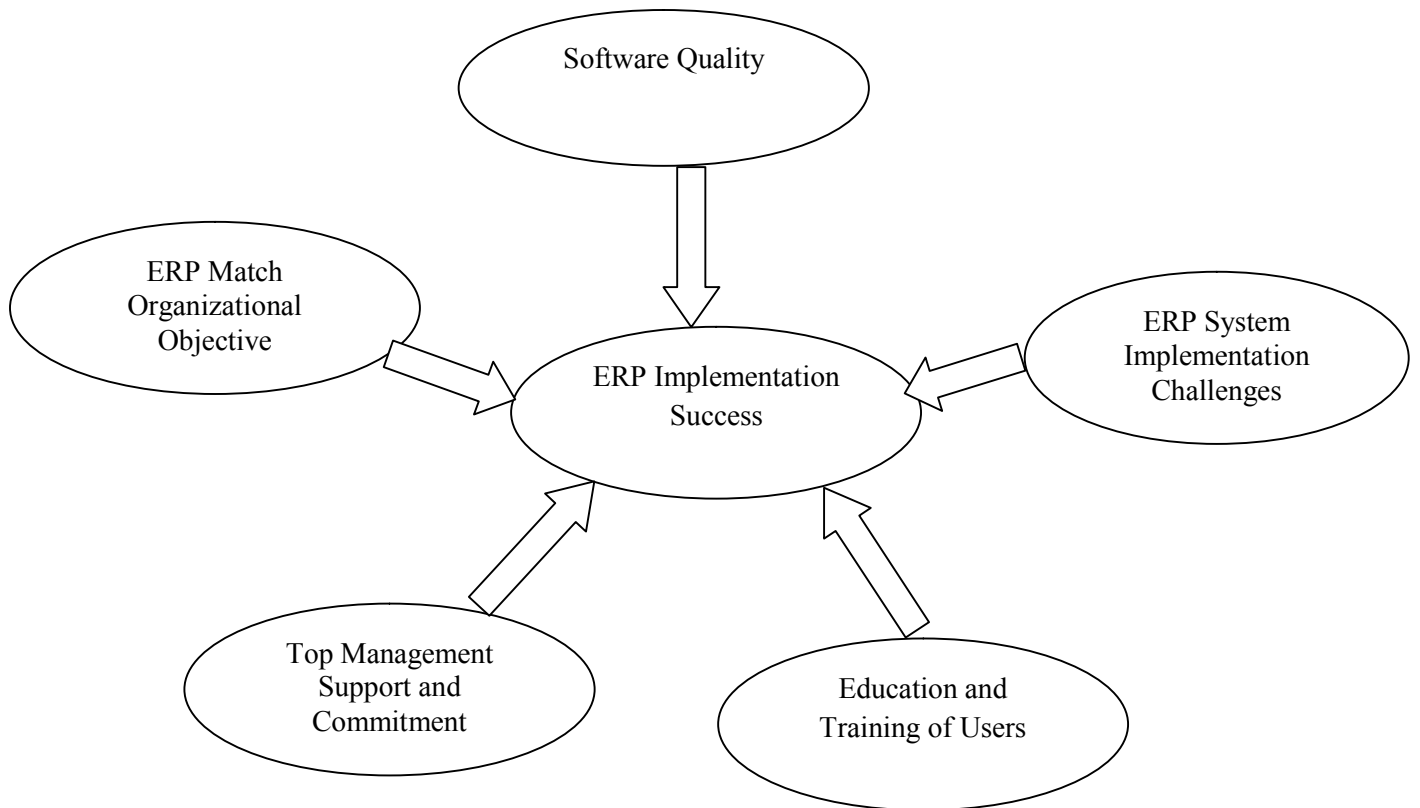
Some ERP implementation researches done in the past were factor-based focusing on identifying the factors or variables considered to be critical in the successful implementation of ERP systems. Within ERP implementation context, critical success factors (CSFs) are defined as those factors that are necessary to ensure a successful ERP project (Gibson *et al.* [16]). Some of these studies resulted in identification of CSFs for successful ERP implementation (Gibson *et al.* [16]).

One of the CSFs identified by these studies is adequate user involvement and participation during the implementation phase (Upadhyay and Dan [28]). User participation in the implementation of ERP systems has been found to be beneficial because it leads to the determination of system requirements from the users and thus creating a positive attitude towards the ERP system. It is important that users are involved in determining the needs of their functional unit.

Previous studies have identified the benefits derived from Enterprise Resource Planning implementation which involve 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, recognizing market trends, ability to adapt to change, increased output, lower production costs among other many (Twite, Money &Remenyi, 1993; Hares &Royle, 1994). The studies have also highlighted 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; Akkermans, &Helden, 2002).

2.3 Conceptual Framework

From the theoretical and empirical literature review, the following conceptual framework of the study is developed by the researcher. A conceptual framework shows the relationship of the dependent variable which is ERP implementation success and the independent variables which has been depicted in figure below. The figure conceptualizes ERP implementation success that is dependent on software quality, system matching organizational objective, top management support and commitment, education and training and the implementation challenges. These variables capture the essence of the study.



Source: Developed by the researcher.

Figure 2.2 Conceptual Framework of ERP Implementation

Chapter Three

Research Design and Methodology

This chapter presents the research design to be used, target population for the study and the sample size that was used. It also explains the data collection procedure, analysis and research instruments the study adopted and ethical considerations.

3.1 Research Design

This research used descriptive research design method to assess the practices and challenges of Enterprise Resource planning (ERP) system in IE Network Solutions. According to MartynShuttleworth(2018), descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. The advantage of the design is that it allows flexibility in data collection and also makes use of open ended and closed questions which would allow the respondent to give extra information freely and its major purpose is description of the state of affairs as they exist at present.

3.2 Research Approach

In this study, the researcher used quantitative research approach. Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative approach was used for data collected using questionnaires from the participants. The quantitative approach was justified because it allowed studying issues in-depth.

3.3 Target Population

The target population used in the study is Employees and Management of IE Network Solutions, Ethiopia that were particularly involved in the recently adopted ERP systems. Total Population or census sampling is used as the size of the population that is using the ERP system is

small. This was preferred because it provided the possibility of examining the entire population and acquiring information. Therefore, the target population will be 75 participants.

3.4 Data Sources and Data Collection Methods

For this study the researcher used both primary and secondary data sources. The Company's employees involved in the ERP implementation and the users of the system is used as the primary sources of data whereas reports, different documents, and unpublished materials will be used as the secondary source of data. To get the primary data, a well-structured Questionnaire is prepared which is paper based and filled out by research participants.

3.5 Instruments of Data Collection

Data was collected through the use of self-administered survey questionnaires. The questionnaire contains three parts. The first part of the questionnaire explained the purpose of the questionnaire stating clearly that data obtained was for pure academic purpose. The second parts contained personal questions to get demographic information and questions.

3.6 Procedures of Data Collection

The questionnaires were distributed in person to the targeted respondents. And follow-up calls were conducted to provide feedback, clarification and reminder. The questionnaire was prepared in Likert scale type of questions. Each response was given a numerical score to reflect its degree of favorableness (1= strongly disagree, 2=Disagree, 3=Not sure, 4=Agree, 5=Strongly agree). The respondents were given a period of three days to answer the questions after which the questionnaires were collected from the respondents.

3.7 Data Analysis Techniques

The collected data and completed questionnaires were sorted, checked and edited for completeness and consistency. The data collected were analyzed, interpreted, and discussed by using descriptive statistics such as frequency distributions, percentages and mean scores to give a

condensed picture of the data. The responses were assigned codes and then ranked from those with the most responses to the least. In order for data to be easily understood, percentages, graphs and tables were used to present the data. The analyzed data will be reported on three main classifications which included; summary of main findings, conclusions and recommendations.

3.8 Reliability and Validity

3.8.1 Validity

Validity refers to the extent to which a measure adequately represents the underlying construct that it is supposed to measure. It deals with the soundness, legitimacy and relevance of a research theory and its investigation. Based on this, the items in the questionnaire are rigorously refined to make sure they measure what they intend to measure. To reduce subjectivity, the questionnaires were revised after repeated discussion with different research professionals. After carrying out a pilot survey, revisions were also made to questions that are not clear to solve all ambiguities.

3.8.2 Reliability

Reliability refers to the consistency of finding, which has to do with the extent to which measures obtained by using a particular instrument are repeatable. A measuring instrument is reliable if it provides consistent results, (Kothari, 2004). Calculating Cronbach's alpha (α) is common practice when multiple items of measurement concepts or constructs are employed, because it is easier to use in comparison with other estimates (Willson, 2003). Cronbach alpha (α) of 0.70 coefficients indicates sound and reliable measures with a Cronbach alpha close to 1 indicates greater consistency. Table 3.1 shows the reliability test Cronbach's Alpha coefficients of the study.

Table 3.1 Reliability Test (Cronbach's Alpha)

Dimensions	Cronbach's Alpha	No. of Items
Software Quality and Simplicity	0.843	6
ERP match organizational Objective	0.790	9
Education and Training	0.826	3
ERP Implementation Challenges	0.788	8
Management Support	0.812	4
Overall Reliability Scale	0.803	30

3.9 Ethical Considerations

The researcher considered to conduct the study in line with the ethical principles which are privacy of possible and actual participants, voluntary nature of participants and maintenance of the confidentiality of data provided by respondents of the questionnaire. The respondents were informed that participation in this study was voluntary. The researcher also respected the respondents' decisions on what information to give and made sure not to misrepresent the data collected.

Chapter Four

Data Analysis and Interpretation

This chapter deals with data presentation, interpretation and analysis of the research. The chapter has two parts: the first is demographic variables of the respondents; while the second part entails the findings of the study based on the data collected mainly via questionnaire. To do this research, a total of 75 questionnaires were distributed to the employees of IE Network Solutions. Out of the total 75 questionnaires, 70 responses were successfully received. The data was analyzed and the information is presented in the form of pie chart and tables.

Table 4.1 Response Rate

Total questionnaires	75
Completed and Returned questionnaires	70
Response Rate	93%

4.1 Demographic Information

Table 4.2 Characteristics of the study population

Demographic Information	Classification	Frequency	Percent
Gender	Male	45	64.3%
	Female	25	35.7%
	Total	70	100%
Level of Education	Below Diploma	0	0%
	Diploma	0	0%
	First Degree	55	78.6%
	Master's Degree	15	21.4%
	PHD and above	0	0%
	Other	0	0%
	Total	70	100%
Years of Experience using ERP system	1-3	61	87.1%
	3-5	6	8.6%
	5-10	3	4.3%
	10 years and above	0	0%
	Total	70	100%
Job level	General Employee	53	75.7%
	Middle Management	13	18.6%
	Senior Management	4	5.7%
	Total	70	100%

Source: Own survey, 2019

It is important to establish the general information of the respondents since it forms the basis under which the study can correctly access the relevant information. In order to collect the general information of the respondents issues such as gender, level of education, years of experience using ERP system and Job level are captured and summarized in the above table.

Out of 70 participants, 64.3% of the respondents were male while 35.7% were female. This implies that majority of the respondents are male.

Education is one of the most important characteristics that might affect the person's attitude and the way of looking and understanding any particular phenomenon. In a way, the response of an individual is likely to be determined by his/her educational status and therefore it became essential to know the educational background of the respondents. From the research findings, 78.6% of the respondents are first degree holders and 21.4% of the employees have specialized at a master's degree level. This implies that the majority of employees in the organization are well educated. Thus, it can be concluded that almost all employees are capable of understanding and answering the statements on the questionnaire.

According to the results on years of experience using ERP system, 87.1% has 1-3 years of experience, 8.6% have 3-5 years and 4.3% have 5-10 years of experience. This indicated almost all of the respondents have worked on the system and have knowledge to reply the questions regarding the practice and challenge of the existing ERP system at IE Networks. The respondents were also asked to indicate their job level. From the findings, the majorities (75.7%) of the respondents are general employees, 18.6% of them are middle management and 5.7% of the respondents are senior management. This implies the study included all job levels fairly which helps to get access to relevant information.

4.2 Analysis and Interpretation of Data on Assessment of ERP System Implementation

4.2.1 Respondents Opinion on ERP System Quality and Simplicity

Table 4.3 ERP System Quality and Simplicity

Statements		SD	D	N	A	SA	Total
The ERP user interface is easy to learn and manipulate	N	0	0	14	41	15	70
	%	0%	0%	20%	58.6%	21.4%	100%
The reporting formats are easily understandable by users	N	0	3	17	25	25	70
	%	0%	4.3%	24.3%	35.7%	35.7	100
The ERP system includes all the necessary features and functions	N	0	0	15	37	18	70
	%	0%	0%	21.4%	52.9%	25.7%	100%
ERP system lets you perform common tasks	N	0	3	10	22	35	70
	%	0%	4.3%	14.3%	31.4%	50%	100%
The system provides reports that are used to make decisions	N	2	5	5	13	45	70
	%	2.9%	7.1%	7.1%	18.6%	64.3%	100%
It allows you to obtain critical information easily	N	0	5	4	20	41	70
	%	0%	7.1%	5.7%	28.6%	58.6%	100%

Source: Own survey, 2019

Table 4.3 summarizes the participant's perception towards ERP quality and simplicity. The researcher raised a question whether the ERP user interface is easy to learn and manipulate. Accordingly, 58.6% of the survey participants agreed, 21.4% strongly agreed and the rest 20% of the respondents remained neutral. Therefore according to the result largest numbers of the respondents find the ERP user interface easy to learn and manipulate.

As shown on table 4.3, 35.7% of the respondents strongly agreed and similarly 35.7% agreed when requested if the reporting formats of the ERP system are easily understandable by users. 24.3% remained neutral and 4.3% of the respondents replied the system is not easily understandable. It implies that majority of the respondents can easily understand the ERP system.

Regarding the system features and functionalities, the majority of respondents (52.9%) agreed that the system includes all the necessary features and functionalities. 25.7% strongly agreed and rest 21.4% remained neutral. The finding implies that majority of the respondents get the necessary features and functionalities from the ERP system which is needed for day to day operational activities.

Table 4.3 also shows that, 50% of the respondents strongly agreed that the ERP system lets employees perform common tasks. Similarly 31.4% agreed when asked the same question. The rest 4.3% disagreed and 14.3% remained neutral. Therefore, the finding shows majority of the respondents reckon the ERP system lets them perform common tasks.

In addition, respondents were requested to indicate their level of agreement whether the system provides reports that are used to make decisions, the vast majority (64.3%) of respondents strongly agreed that the ERP system provides reports that are used to make decisions while 10% believe that the system doesn't provide reports used for decision making purpose. The rest 7.1% of the respondents preferred to remain neutral on the matter. Based on the above fact, it can conclude that the majority of respondents consider the ERP system as one of the tools that assist decision making process.

Survey respondents were asked how easily they can obtain critical information from the system. The finding indicates that, 58.6% and 28.6% of the respondents strongly agreed and agreed, respectively that employees can easily obtain information from the ERP system, while 7.1% disagreed. The remaining 5.7% remain neutral on the subject. This information implies that majority of respondents can acquire critical information from the system without any hindrance. This further indicates that ERP allows different departments in with diverse needs to communicate with each other by sharing the same information in a single system.

Table 4.3 reveals that the ERP system quality and simplicity is interpreted as: user interface is easy to learn and manipulate, the reporting formats are easily understandable by users, the ERP system includes all the necessary features and functions, ERP system lets employees perform

common tasks, the system provides reports that are used to make decisions and it also allows employees to obtain critical information easily.

4.2.2 Response on Training Effectiveness to Prepare Users

Table 4.4 Training Effectiveness to Prepare Users

Statements		SD	D	N	A	SA	Total
The training conducted on the usage of the ERP system was adequate and useful to you.	N	0	1	30	20	19	70
	%	0%	1.4%	42.9%	28.6%	27.1%	100%
The trainers were experts and helped me understand the system.	N	0	6	14	7	43	70
	%	0%	8.6%	20%	10%	61.4%	100
Employees are regularly monitored to ensure that they have the skills to use the ERP system.	N	1	43	4	11	11	70
	%	1.4%	61.4%	5.8%	15.7%	15.7%	100%

Source: Own survey, 2019

Table 4.4 summarizes participants response for the questions raised in relation to the effectiveness of the training conducted to prepare users. For the question regarding training conducted on the usage of the ERP system, 55.7% of the survey participants responded that the training conducted was adequate and useful while 1.4% responded that the training was insufficient. The remaining 42.9% remained neutral. From the response it can be concluded that more than half of the employees believe the training conducted to familiarize the system was sufficient. But, we can see that the number of employees that considered the training to be insufficient was close to half of the total respondents. This shows that managers should consider giving the training again to make sure that all employees can get advantage of the system.

Regarding whether the trainers were experts on ERP system, 71.4% of the participants responded the trainers were experts and that they helped the staff to understand the system while 8.6% of them said the trainers were not fit to give the training on the implemented ERP system and thus failed to understand the system to its full capacity. The other 20% of the respondents preferred to

remain neutral. Since the majority of the respondents replied that the trainers were experts, it can be concluded that the trainers have adequate knowledge of the ERP system deployed and can be of assistance for employees if there is a knowledge gap observed in few employees.

Table 4.4 also shows the response for the question raised whether the employees are regularly monitored to ensure that they have the skills to use the ERP system. Accordingly, 31.4% of the respondents said they are being regularly monitored to make sure they have the skills to use the ERP system. On the contrary, 62.8% of the respondents replied that they are not getting any supervision to acquire the skills to manipulate the system. The rest 5.8% of the respondents neither agreed nor disagreed. As the above finding indicated the majority of the employees consider there is no regular check and knowledge update to make sure the staff has the skills to use the ERP system. It implies that the company should re-consider checking if employees have the necessary skills that deemed important in order to be able to manipulate the ERP system.

4.2.3 Response to verify the ERP system meet its anticipated objective

Table 4.5 Verify if the ERP system meets its anticipated objective

Statements		SD	D	N	A	SA	Total
Due to the implementation of ERP, the service delivery time is improved.	N	0	0	16	34	20	70
	%	0%	0%	22.8%	48.6%	28.6%	100%
The company is able to save costs in its regular activities and it reflects in subsequent Quarter reports.	N	0	2	10	43	15	70
	%	0%	2.9%	14.3%	61.4%	21.4%	100%
The transparency of information between the departments is improved, so that effective communication between various departments is possible than before ERP implementation.	N	0	5	11	30	24	70
	%	0%	7.1%	15.7%	42.9%	34.3%	100%
The quality of work is greatly enhanced when doing with ERP	N	0	10	3	10	47	70
	%	0%	14.3%	4.3%	14.3%	67.1%	100%
ERP implementation resulted reduction of operational cost	N	3	2	8	30	27	70
	%	4.3%	2.9%	11.4%	42.9%	38.5%	100%
ERP implementation improved financial operations	N	1	4	10	34	21	70
	%	1.4%	5.7%	14.3%	48.6%	30%	100%

ERP implementation resulted reduction of administrative cost	N	0	2	9	18	41	70
	%	0%	2.9%	12.9%	25.7%	58.5%	100%
ERP implementation improved interaction with suppliers	N	0	5	13	30	22	70
	%	0%	7.1%	18.6%	42.9%	31.4%	100%
ERP implementation improved interaction with customers	N	0	5	29	20	16	70
	%	0%	7.1%	41.4%	28.6%	22.9%	100%

Source: Own survey, 2019

One of the objectives of this study was to determine to what extent the ERP system meet its anticipated objective. The respondents were therefore asked a series of questions in this regard and their response is presented in summary in table 4.5 and the interpretation is discussed below. The survey respondents were asked if the delivery time has improved after the implementation of ERP. Accordingly, 77.2% of the respondents replied that the implementation of ERP definitely improved delivery time while the rest 22.8% preferred to remain neutral. This result indicates that the company benefited from the ERP implementation and it has been showing in the form of enhanced delivery time.

Table 4.5 also shows that 82.8% of the respondents have replied that due to ERP implementation the company is able to save costs in its regular activities and that it showed in the subsequent quarter reports. In the contrary, 2.9% of the respondents believed the company did not save costs. The remaining 14.3% were neutral on this subject. As the majority of the respondents answer agreed that the company saved costs, it can be concluded that ERP implementation resulted in cost saving in regular activities carried out by the company.

Regarding question raised to determine if the transparency of information between the departments is improved after ERP implementation, 77.2% of the respondents replied that there is improved transparency of information than before the system was deployed. On the contrary, 7.1% of the respondents said there is no improvement in flow of information between departments. The other 15.7% neither agreed nor disagreed on this issue. This shows that majority of the staff is able to get transparent information so that effective communication between various departments is possible than before ERP implementation.

Survey respondents were asked whether the quality of work has improved when doing with ERP, 81.4% of the respondents considers that there is an immense improvement observed on the quality of work when done on the ERP system. On the other hand, 14.3% responded the quality of work did not improve when done on ERP. The remaining 4.3% remained neutral. This shows, majority of the respondents observed enhanced quality of work when staff is using ERP rather than manual manipulation.

As shown on table 4.5, 81.4% of the respondents replied that the ERP implementation resulted reduction of operational cost. In the contrary, 7.2% responded the system did not reduce operational costs. The remaining 11.4% replied neither of the two. The finding implies that ERP implementation reduced operational costs.

As shown on table 4.5, 78.6% of the respondents replied that the ERP implementation improved financial operations. On the contrary, 7.1% responded the system did not improve financial operations. The rest 14.3% remained neutral. The finding implies that ERP implementation enhanced financial operations.

Regarding administrative cost, 84.2% of the respondents replied that the ERP implementation reduced administrative cost. On the other hand, 2.9% responded the system did not reduce administrative cost. The remaining 12.9% replied neither of the two. The finding implies employees believe due to ERP implementation administrative costs are reduced.

Regarding interaction with suppliers, 74.3% of the respondents replied that the ERP implementation improved interaction with supplier while 7.1% responded the system did not help to improve communication with suppliers. The rest 18.6% remained neutral on the subject. The finding implies employees believe ERP implementation resulted in improved interaction with the company's suppliers.

The researcher also requested whether the ERP implementation improved interaction with customers, 51.5% of the respondents replied that they observed improvement on the company's communication with customers while 7.1% of the respondents replied that the system did not

help to improve interaction with customers. The remaining 41.4% of the respondents were neutral. The finding implies that majority of employees believe ERP implementation resulted in improved interaction with the customers.

4.2.4 Establish the Challenges Faced by IE Network Solutions, for using the ERP System

Table 4.6 Challenges associated with the ERP system implementation

Statements		SD	D	N	A	SA	Total
Users were resistant to change	N	0	14	31	12	13	70
	%	0%	20%	44.3%	17.1%	18.6%	100%
Both management and employees had unrealistic expectations	N	6	0	25	29	10	70
	%	8.6%	0%	35.7%	41.4%	14.3%	100%
The change from manual to automated working system was not successful	N	20	22	8	11	9	70
	%	28.6%	31.4%	11.4%	15.7%	12.9%	100%
There was lack of implementation skill	N	11	13	22	20	4	70
	%	5.7%	18.6%	31.4%	38.6%	5.7%	100%
Migration of different types of data was a big problem	N	6	14	15	21	14	70
	%	8.6%	20%	21.4%	30%	20%	100%
The system led to major organizational changes	N	3	16	10	39	2	70
	%	4.3%	22.9%	14.3%	55.7%	2.8%	100%
Customization of ERP to organizational needs took too long	N	5	17	0	33	15	70
	%	7.1%	24.3%	0%	47.2%	21.4%	100%
The ERP system is too complex	N	9	30	10	16	5	70
	%	12.8%	42.9%	14.3%	22.9%	7.1%	100%

Source: Own survey, 2019

Table 4.6 summarizes participants response for the questions raised in relation to the challenges associated with the ERP implementation. As shown on the table, 35.7% of the respondents replied that users were resistant to change from what they were used to before the ERP system was deployed while 20% of the respondents said users were actually open minded about the change to automated ERP system. The remaining 44.3% of the participants responded neutral.

This implies that employees were unwilling to change to the ERP system. It can be concluded that comparatively there were significant number of people who were resistant to change.

The respondents were requested whether both management and employees had unrealistic expectations, the findings show 55.7% of the respondents consider that there was unrealistic expectations from both management and employees. On the contrary, 8.6% believed that the staff had realistic expectations. The rest 35.7% neither agreed nor disagreed on this issue. This implies that majority of the staff had unrealistic expectations on ERP implementation.

Regarding the change from manual to automated working system, 60% of the respondents said that there was successful change from manual to automated working system, while 28.6% responded that the change from manual to automated working system was not successful. The rest 11.4% responded neutral. The finding shows that majority of the respondents believed the change from manual to automated working system was successful.

Table 4.6 indicates 44.3% of the respondents implied there was lack of implementation skill while 24.3% of the respondents said the team who implemented the ERP system had the necessary skills. The remaining 31.4% were neutral. The finding implies that there was lack of implementation skill observed.

Regarding the question raised about migration of different types of data, 50% of the respondents said migration of data was one of the major problems faced during the implementation phase while 28.6% of the respondents considered the migration process to be problem free. The other 21.4% responded as neutral. From this, it can be concluded that during implementation the team had a problem during data migration.

Survey participants were asked whether the ERP system led to major organizational changes. Accordingly, 58.5% of the respondents replied that the system indeed led to organizational changes. On the contrary, 27.2% of the respondents believed there was no change on the organization observed that resulted because of the ERP implementation. The rest 14.3% responded neither of the two. This implies that the company experienced organizational changes

as a result of the ERP implementation. This is seen as a challenge as it was observed on previous findings that most of the staff was resistant to change.

Regarding customization of ERP to organizational needs, 68.6% of the respondents replied the customization process took a significant amount of time deemed too long as it was beyond the allocated period. On the other hand, 31.4% of the respondents said the customization process didn't take too long. This indicates that the customizing the ERP system to organizational needs took longer period than its first allocated time in the implementation plan.

Table 4.6 shows, 30% of the participants viewed the ERP system as too complex. On the contrary, 55.7% of the respondents said the system is not complex. The remaining 14.3% responded neutral. From this it can be concluded that, the staff can understand the ERP system and that it is not complex.

4.2.5 Response to Management Support on the ERP System Implementation

Table 4.7 Management Support

Statements		SD	D	N	A	SA	Total
Management provides sufficient resources for ERP (upgrades, maintenance, etc.)	N	1	9	5	43	12	70
	%	1.4%	12.9%	7.1%	61.4%	17.2%	100%
Management considers ERP as part of their strategic vision	N	1	4	14	31	20	70
	%	1.4%	5.7%	20%	44.3%	28.6%	100%
Management encourages users to learn skills from external sources (training, forums, conferences, etc.)	N	0	10	5	33	22	70
	%	0%	14.3%	7.1%	47.2%	31.4%	100%
Management considers ERP as a priority for the company	N	2	7	16	17	28	70
	%	2.9%	10%	22.9%	24.2%	40%	100%

Source: Own Survey, 2019

Table 4.7 summarizes participant's response for the questions raised about the extent to which management supported the ERP implementation and the employees. As shown on the table, 78.6% of the respondents replied management provides sufficient resources for ERP while 14.3% of the respondents said they don't get sufficient resources. The remaining 7.1% of the respondents preferred to remain neutral. This implies that management indeed provides enough resources for ERP that may include upgrades when necessary and regular maintenance.

Regarding the question raised that management considers the ERP system as part of their strategic vision, 72.9% of the respondents consider that ERP is part of the company's strategic vision while 7.1% of the respondents believe that management doesn't consider ERP as part of their strategic vision. The rest 20% of the participants were neutral on this subject. The finding implies that majority of the employees reflect ERP is part of the companies and the management strategic vision.

Table 4.7 shows, 78.6% of the respondents replied that management goes beyond and above to encourage users to learn skills from external sources. On the contrary, 14.3% of the respondents replied the employees are not encouraged enough to learn skills from external sources. The remaining 7.1% responded neutral. From the findings, it can be concluded that management does encourage users to use external sources which may include arranging training, supporting staff to participate in forums and conferences so that the employees could update their knowledge regarding ERP system usage.

Table 4.7 shows, 64.2% of the respondents believe that management considers ERP as a priority for the company while 12.9% of the respondents replied ERP is not considered as a priority by management. The rest 22.9% of respondents remained neutral on the matter. This implies that ERP is considered as a priority by management team, to conduct day to day operational activities.

Chapter Five

Summary, Conclusion and Recommendation

This chapter comprises discussions associated with the findings of the entire research. This includes a summary of the findings, conclusions and recommendations.

5.1 Summary of findings

The purpose of this study was to assess the implementation of the ERP system at IE Network Solutions PLC. The study targeted management and employees of the company that were involved in the adoption of ERP implementation. Questionnaires were used as instruments for data collection. Based on the analysis and interpretation made in the previous chapter, the major findings are summarized as follows:

Regarding demographic findings of the respondents, the majorities of the respondents are male, bachelor's degree holders, in the general employee category and have 1-3 years of experience working with ERP system.

The research revealed that the ERP system has good quality and is considered user friendly. This is further confirmed by the respondents response that reveal the ERP user interface is easy to learn and manipulate also the reporting formats are easily understandable by users. Furthermore, respondents confirmed that the ERP system includes all the necessary features and functions therefore lets employees perform common tasks. The system provides reports that are used to make decisions and allows employees and management to obtain critical information easily.

In determining the training effectiveness to prepare users, majority of the respondents consider the training conducted on the usage of the ERP system was adequate and useful. The research revealed that the trainers were experts and helped the staff understand the system. On the other hand respondents replied that employees are not being regularly monitored to ensure that they have the skills to use the ERP system.

Regarding the extent to which the ERP system meets its anticipated objective, the research shows that majority of the respondents confirmed on the following: due to the implementation of ERP; the service delivery time is improved, the company is able to save costs in its regular activities and it reflects in subsequent Quarter reports, the transparency of information between the departments is improved, so that effective communication between various departments is possible than before ERP implementation and the quality of work is greatly enhanced when doing with ERP. Majority of the respondents also replied ERP implementation resulted reduction of operational cost, improved financial operations, reduction of administrative cost and improved interaction with suppliers and customers.

The research revealed that majority of the respondents replied that there are indeed challenges faced for using the ERP system in the company. Some of these challenges are: users were resistant to change, both management and employees had unrealistic expectations about the ERP system, there was lack of implementation skill, the implementation team faced a problem during migration of different types of data and customization of ERP to organizational needs took too long. On the contrary, the respondents didn't see the change from manual to automated working system as a challenge rather they believed it was a successful process. The system is not complex as per the response and therefore is not considered as a challenge.

In determining the management support for the implementation of the system and its users, the research revealed that management provides sufficient resources for ERP that may include upgrades when necessary and regular maintenance. Management also considers ERP as part of their strategic vision as a result they encourage users to acquire skills from external sources by arranging training and supporting staff to participate in forums and conferences. In addition, majority of respondents replied that management considers ERP as a priority.

5.2 Conclusion

Based on the findings of the research, the following conclusion can be drawn:

- The ERP system deployed at IE Network Solutions has good quality and is considered user friendly. The user interface is easy to learn and manipulate and the reporting formats are easily understandable by users.
- The training conducted to prepare users on the usage of the ERP system was effective but it was clear from the findings that the employees are not being regularly monitored to ensure that they have the skills to use the ERP system.
- The ERP system did meet its anticipated objective which is realized from the fact that due to the implementation of the system the service delivery time is improved and the company is able to save costs in its regular activities which are reflected in subsequent Quarter reports. The transparency of information between the departments is improved. ERP implementation resulted reduction of operational cost, improved financial operations, reduction of administrative cost and improved interaction with suppliers and customers.
- The company did indeed face challenges during the implementation of the ERP system. These challenges could be divided into two which are from the user's side and from the implementation phase. The users had unrealistic expectations and were resistant to change during the transition phase. From the implementation stage; there was lack of implementation skill, migration of types of data was a big problem and also customization of ERP to organizational needs took longer time than its allocated period in the original plan.
- The management supported ERP implementation and the user by providing sufficient resources (upgrades and maintenance) for ERP and encourage users to learn skills from external sources by arranging training and supporting staff to participate in forums and conferences related to ERP system.

5.3 Recommendation

The study revealed both management and employees had unrealistic expectations from the ERP. In order to avoid this, organizations need to document the requirements before the actual implementation starts. Directly proceeding into an ERP implementation without a clear definition of what the company is trying to achieve leads to failure. It is important to keep the requirements focused to what the ERP is intended to solve.

Moreover, great consultant is essential to the success of ERP implementation. Having someone with industry experience who can help throughout the process will help ensure that the project stays on track, and that the company gets the most from the ERP system. IE Networks will benefit from hiring a firm who has experience with the IT industry, and who is willing to take up to several months to work with the organization through the implementation. This will help avoid challenges faced during implementation phase that was revealed in the research.

In addition, the company needs to make sure there is a regular supervision and monitoring to ensure employees have the necessary skills that deemed important in order to be able to manipulate and take advantage of the ERP system. Even if the ERP system is implemented perfectly, it will be useless if employees don't know how to use it correctly. The system data may get messed up by employees who are operating the system incorrectly. Therefore, IE Networks must provide sufficient training to employees and regularly monitor them to ensure they have the required skill set.

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Appendix

Questionnaire

Dear Respondents:-

I would like to express my sincere appreciation for your time and honest responses. This questionnaire is intended to gather research data as part of an academic research for my Masters of Business Administration Degree at St Mary University. The information obtained will not be used for any other purpose other than to enhance the body of knowledge in Academic Research. I kindly request you to take your time to complete the questionnaire to the best of your knowledge.

I. Personal Information

1. What is your Gender?

Male Female

2. What is your level of education?

Below Diploma First Degree PHD Above

Diploma Master's Degree

Other please specify _____

3. How many years of experience do you have in using the ERP system?

1-3 years 3-5 years 5-10 years 10 years and above

4. What is your job level?

General Employee Middle Management Senior Management

II. Please use the following scale to indicate your level of agreement and circle your choice from the list of scales.

1= Strongly Disagree (SD)

2= Disagree (D)

3= Neutral(N)

4= Agree (A)

5= Strongly Agree (SA)

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	ERP System Quality and Simplicity					
8.	The ERP user interface is easy to learn and manipulate	1	2	3	4	5
9.	The reporting formats are easily understandable by users	1	2	3	4	5
10.	The ERP system includes all the necessary features and functions	1	2	3	4	5
11.	ERP system lets you perform common tasks	1	2	3	4	5
12.	The system provides reports that are used to make decisions	1	2	3	4	5
13.	It allows you to obtain critical information easily	1	2	3	4	5
	Training effectiveness to prepare users					
14.	The training conducted on the usage of the ERP system was adequate and useful to you.	1	2	3	4	5
15.	The trainers were experts and helped me understand the system	1	2	3	4	5
16.	Employees are regularly monitored to ensure that they have the skills to use the ERP system.	1	2	3	4	5
	To what extent did the ERP system meet its anticipated objective					
17.	Due to the implementation of ERP, the service delivery time is improved.	1	2	3	4	5
18.	The company is able to save costs in its regular activities and it reflects in subsequent	1	2	3	4	5

	Quarter reports.					
19.	The transparency of information between the departments is improved, so that effective communication between various departments is possible than before ERP implementation.	1	2	3	4	5
20.	The quality of work is greatly enhanced when doing with ERP	1	2	3	4	5
21.	ERP implementation resulted reduction of operational cost	1	2	3	4	5
22.	ERP implementation improved financial operations	1	2	3	4	5
23.	ERP implementation resulted reduction of administrative cost	1	2	3	4	5
24.	ERP implementation improved interaction with suppliers	1	2	3	4	5
25.	ERP implementation improved interaction with customers	1	2	3	4	5
	Challenges on ERP implementation					
26.	Users were resistant to change	1	2	3	4	5
27.	Both management and employees had unrealistic expectations	1	2	3	4	5
28.	The change from manual to automated working system was not successful	1	2	3	4	5
29.	There was lack of implementation skill	1	2	3	4	5
30.	Migration of different types of data was a big problem	1	2	3	4	5
31.	The system led to major organizational changes	1	2	3	4	5
32.	Customization of ERP to organizational needs took too long	1	2	3	4	5
33.	The ERP system is too complex	1	2	3	4	5
	Management Support					
34.	Management provides sufficient resources for ERP (upgrades, maintenance, etc.)	1	2	3	4	5
35.	Management considers ERP as part of their strategic vision	1	2	3	4	5
36.	Management encourages users to learn skills from external sources (training, forums, conferences, etc.)	1	2	3	4	5
37.	Management considers ERP as a priority for them	1	2	3	4	5