Integration of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) for Quality Service Delivery: Achievements, Challenges and Prospects
The Case of Ethiopian Airlines

BY

Markos Mulat Gebreyes

GSE/1453/06

Advisor: Dr. Elias Birhanu (PhD)

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Masters of Art in Public Management and Policy (Public Policy Stream)

November 2016
Addis Ababa University
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APPROVED BY BOARD OF EXAMINERS

_____	_____
Advisor	**Signature & Date**
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Internal Examiner	**Signature & Date**
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External Examiner	**Signature & Date**
_____	_____
Chairperson or Graduate Program Coordinator	**Signature & Date**

DECLARATION

I, **Markos Mulat Gebreyes**, declare the thesis entitled: Integration of Enterprise Resource Planning (ERP) & Customer Relationship Management (CRM) for Quality Service Delivery: Achievements, Challenges and Prospects in the Case of Ethiopian Airlines, is my original work, prepared under the guidance of Dr. Elias Berhanu (PhD). 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.

_____

Signature & Date

DEDICATION

This piece of work is dedicated to my parents for their selfless support, constant encouragement and inspiration toward in pursuit of my academic ambitions.

ACKNOWLEDGEMENTS

First of all, I would like to thank the Almighty God who gave me strength and encouragement to complete the courses of this study and Holy Mother of God, St. Mary, for her intercession through all the rough and difficult times.

Thank you Kidist Arsema

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I would also like to sincerely express my gratitude to the employee of Ethiopian Airlines for their kind and unlimited support during the survey. My gratitude also goes to the customers of the company who took time off their busy schedules to respond to the questionnaire. I must also acknowledge my brothers, especially Gemechu Mulat for his continuous support and encouragement in the course of my study. In addition, I like to thank my fellow-students, especially Alebel Girma for his good and helpful advice.

Finally, I am very grateful indeed for those people whose names are not mentioned here, for their direct or indirect contributions, to the completion of this research. For all of you, your contributions will always be in my heart. The effort made by Addis Ababa University, Colleges of Business and Economics, Department of Public Administration and Development Management in facilitating the course and research work is highly appreciated. Thank you

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List of Acronyms

ERP	Enterprise Resource Planning
HCM	Human Capital Management
SLM	Supply and Logistic Management
APS	Advanced Planning and Scheduling
FICO	Finance and Controlling
CRM	Customer Relationship Management
EAL	Ethiopian Airlines
HR	Human Resource
HRM	Human Resource Management
ICT	Information & Communication Technology
IS	Information Systems
IT	Information Technology
WWW	World Wide Web

Abstract

Service quality and customer satisfaction are very important concepts that companies must understand in order to remain competitive in business and hence grow and in the process of delivering quality service, technology plays a larger role. The purpose of this study was to explore the achievements, pinpoint the challenges and scrutinize the prospects of integrating Enterprise Resource Planning (ERP) & Customer Relationship Management (CRM) and analyze their impact on quality service delivery in Ethiopian Airlines. A structured questionnaire was designed, pre-tested, modified, and self-distributed to senior executives, employees and customers of the company to capture data. A total sample of 165 were taken as a respondent. Out of these, 115 were employees of the company and 50 were customers who have made a flight with Ethiopian airlines on any route. Quantitative & qualitative techniques were selected to collect the data. Non-probability purposive sampling was used during the selection of the sample. The SPSS computer package was used to analyze the collected data. Feedbacks received from 84 employees and 45 customers were analyzed & the response rate was 73.1 and 90 percent respectively. The analysis of employee responses revealed that the integrated systems has improved various functions of different department in the company by acting as a catalyst to support the tactical planning processes, ensures the right number and kinds of people at the right place and right time, reduced the financial cycle closing time and improve the supply chain performance by adding value to the company. In addition, since the integration, the company is enjoying the ultimate benefit of all-in-one system that can decrease errors, lower cycle times, reduces turnaround time, and support management decisions. The findings also indicated that delivering high quality service increase customer satisfaction, which in turn leads to high level of customer commitment and loyalty. Several challenges were also pointed out among which included lack of finance to update and maintain the systems, lack of expertise in IT to operate the systems, lack of training and development of staff on the systems. The study also assessed the perception of the customers about the quality of the service delivered by the Ethiopian Airlines by using five dimensions of the SERVQUAL model. The result revealed that, in reliability, tangibles and assurance dimensions, the customers are satisfied, but in responsiveness and empathy, they feel dissatisfied. This implies the existence of inefficiency in delivering prompt service, helping customers & responding to their inquiries and understanding individual customer needs. Finally, the findings are so important to enable the company managers to have better understanding of customers' perception of service quality and employee attitudes toward integrated systems to further improve the systems and measure customers' satisfaction & service quality seasonally to keep the services corresponded with customers' opinions.

Key words: *Enterprise Resource Planning (ERP), Customer Relationship Management, Integration of ERP and CRM, Service Quality, Ethiopian Airlines*

Introduction

1.1. Background of the Study

Service quality is an attitude related to a particular service. It is the customer's overall impression of the relative inferiority or superiority of the organization and its services (Lawrence, 2006). According to FDRE Service Delivery Policy (SDP), 2001, quality service delivery is a systematic arrangement of activities in service giving institutions with the aim of fulfilling the needs and expectations of service users and other stakeholders with the optimum use of resources. Rosen (2015) stated that service industries in developed countries have been continuously increasing and the world trade in services now approach 4.7 trillion dollar per year. According to Global security organization, the service sector accounts for 45% of gross domestic product of the Ethiopian economy (GSO, 2016).

The pressures for improved efficiency during the past decades on service sector organizations across the world accompanied by strong need to revolutionize service delivery process with aim of creating solutions that better meet citizens' needs and transform their functions from closed, top-down, bureaucratic, and paper-based transactional models to integrated online systems that encourage a new kind of interaction between citizens and the organizations since delivering quality service has significant relationship with customer satisfaction (Boulding et al., 2005), customer retention (Grönroos, 1994), loyalty (Gulati and Oldroyd, 2005), costs (Wilson 2008), profitability (King,, 2008), service guarantees (Sheth, 2001) and growth of organization (Payne and Frow, 2005). To provide better quality service, institutions have to change their outdated working processes and need to become customer oriented.

In the current globalized environment, the success of an organization largly rests in resolving the confilicts between the various business functions and making them do what is good for the organization as a whole. For this, information is critical and every body whith in the organization should know what is happening in the other parts of the

organization. It is not enough that each department manages its activeties effeciently and function as islands of information, each working in isolation. Each and every employee should know what their counterpart are doing, how their actions and decisions will affect the other deparments (Gargeya and Brady, 2005). This kind of information sharing was difficult in the early days (Malhotra and Temponi, 2010). Now organizations are using technologies to improve their service delivery process by adopting and integrating an IT applications that facilitate information sharing in their front-office and back-office operations. Enterprise Resource Planning (ERP) and Customer relationship management (CRM) are an IT application systems that currently used by several organizations across the world to integrate different functions of their organizations (Zhang et al., 2005).

According to Malhotra and Temponi (2010), Enterprise Resource Planning (ERP) is the recent in a progression of functionally oriented information systems which reflects the trend towards end user computing that incorporates wide range of computer based applications. It covers the techniques and concepts employed for the integrated management of business as a whole, from the viewpoint of the effective use of management resource and improving the efficiency of the enterprise (Yu, 2008). Ranganathan and Brown (2006) stated ERP as a common database system and a modular software design that allow every department of a business to store and retrieve information in real-time. A successfully implemented ERP system has the advantages of reduced cost and high system quality (Dezdar, 2012). According to Thomas and Michael (2001) ERP packages originally targeted at the manufacturing industry, and consisted mainly of functions for planning and managing core businesses such as sales management, production management, accounting and finacial affairs, etc. However, in recent years, adaptation not only to the manufacturing industry, but also to diverse types of industry has become possible and the expansion of implementation and use has been progressing on a global level.

On the other hand, customer relationship management (CRM) is the other management concept that currently sweeping the business world and finding audience in the professional service sectors to improve service delivery process of organizations (Sheth,

2000). According to Bose (2012), companies are increasingly focused on managing customer relationships and customer assets in order to unite the potentials of relationship strategies and information technology to create profitable, long-term relationships with customers and key stakeholders. CRM explicitly recognizes the long-run value of potential and current customers, and seeks to increase revenues, profits, and shareholder values through targeted marketing activities directed toward developing, maintaining, and enhancing successful company and customer relationships (Gronroos, 1999). This requires a cross functional integration of processes, people, and operations that is enabled through information technology applications (Payne and Frow, 2005).

CRM is a front-office system that centralizes all information about external marketing, manages the sales pipeline, automates customer service, and tracks information about customers (Yu, 2008). On the other hand, ERP system is back-office operations that streamline and integrate internal business processes, such as accounting, purchasing, collections, human resources, payroll, manufacturing, distribution, and more (Zhang et al., 2004). Properly integrated back-office (ERP) and front office (CRM) system bring together a previously disconnected business processes by automating complex, multistage processes in end-to-end manner and in turn facilitate delivering quality service to customer and meet their requirement (Hendricks et al, 2007).

ERP and CRM packages, if chosen correctly, implemented and integrated judiciously and used efficiently, will raise the productivity and profits of companies dramatically (Ruivoa, et al., 2014a). But many company fails in this because of wrong product, haphazard implementation and inefficient or ineffective usages (Dezdar, 2012). Traditionally, it has been difficult to integrate CRM and ERP systems because of the vastly different architectures and the lack of standards for exchanging data between the systems. In addition, more than 90% of ERP and CRM integration have been delayed and required additional budget amounts due to numerous changes in the original plan (Malhotra and Temponi, 2010). Even when a company realizes that their ERP and CRM implementation is not going to be successful, it is usually impossible to cancel the effort (Hendricks et al., 2007).

Thus, to further improve the systems and measure customers' satisfaction and service quality seasonally to keep the services corresponded with customers' opinions, precise and timely information on the application and outcomes of the systems become critically important. This research, therefore, sought to find out the achievements, pinpoint the challenges and scrutinize the prospects of integrating Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) and analyze their effect on quality service delivery in Ethiopian Airlines within the perception of senior executives, middle-line managers and customers. The findings of the study will be used by the company to improve the quality of service delivery process and fulfill the needs of customers through the successful implementation of integrated ERP and CRM systems. The study also offer a foundation for the readers and academicians that make them understand how computerized system can assist organizations in order to achieve their predetermined objectives.

1.2. Background of the Organization

Ethiopian Airlines is the service sector organization which was founded on December 30, 1945 by Emperor Haile Selassie with assistance from Trans World Airlines (TWA). It commenced operations on April 8, 1946, with a weekly service between Addis Ababa and Cairo with five Douglas DC-3 propeller-driven aircraft. The airlines started long-haul services to Frankfurt in 1958 and inaugurated its first jet service in January 1963 from Addis Ababa to Nairobi. Today, Ethiopian Airlines serves 92 international destinations with 530 weekly international departures from Addis Ababa and a total of 625 weekly international departures worldwide. In 2007, Ethiopia Airlines provided basic pilot and aviation maintenance training to trainees from African countries including Rwanda, Tanzania, Chad, Djibouti and Sudan. At the moment, the Ethiopia airline has been in rapid expansion mode to capture hot Africa-Asia market (www.ethiopianairlines.com).

Since 2010, the airlines has designed a fifteen years vision named as "Vision 2025". By the year 2025, Ethiopian Airlines will be the most competitive and leading aviation group in Africa by providing safe, market driven and customer focused Passenger and

Cargo Transport, Aviation Training, Flight Catering, Maintenance Repair and Overhaul, Ground Services, Domestic and Regional services. Currently, different statistics indicated Ethiopia Airlines as the most successful and the largest airline in Africa. In spite of the difficulties facing the aviation industry, including escalated fuel prices, slowdown of world economy and fierce competition, Ethiopian Airlines has achieved a record profit in its latest full fiscal year of 2014/15 and has already taken over the leading role from South African Airways since then. Ethiopian Airlines is one of the few airlines that have continued to grow during the past years despite the downturn in the international airline industry (http://www.ethiopianairlines.com).

In the present globilized environment, businesses have been competing each other with their high-tech investments and their technology. Especially, ın a service sector like airline services, ıt is so important to have a good equipment and great technology. Previously, Ethiopian airlines had a range of individual systems before implementing the current ERP and CRM system for controlling and monitoring their functions, which had problems of interfacing with each other as they had different databases and file formats. The old systems did not provide accurate, consistent and accessible data that was required for good and timely decision-making and performance assessment and did not support significant growth of the business and were not sufficiently agile to keep pace with the changing business environment.

As the result, the airlines management realized the necessity of adopting technology such as ERP and CRM systems to overcome those challenges and led the business to success since the systems are useful tool for the company to build a strong information systems infrastructure and enable the administrator to undertake better decision making based on accurate and real-time information and facilitate quality service delivery which in turn satisfy the customers. The company has obtained license for the system implementation from the world well known software developer named SAP AG, an ERP & CRM vendor company through open tender and SAP's Africa partner, SAP South Africa was selected as implementer partner for the ERP and CRM systems.

1.3. Statement of the Problem

With the changing world and constant new technology that is available and environment of increasing in competition locally and globally, organizations must become more adaptable, resilient and customer-focused and managers need to be aware of the technology that will increase effectiveness and improve efficiency in their systems of service delivery. Today, providing quality and unique services as required by customers are very challenging for organizations. Creating effective relationship with customers is critical issue since service requires high interaction with customers, and this relationship has a great influence on customers' satisfaction since no business can live on without satisfied customers. Non-availability of a proper customer tracking system leads to customer needs being unheard or neglected and lack of dedicated resources with decision making powers to resolve customer issues quickly resulted with unhappy customer.

In the current globalized world, the difference between market leaders and followers, successful companies and sick industries, is the way in which companies make use of information about business environment. Companies generate huge amounts of data, documents and details about customer, employee and so on. In order to manage the produced data and deliver high quality information to the decision makers at the right time and automate the process of data collection, collation and refinement, organizations have to make Information Technology (IT) an alley since only an organization that makes the best possible use of the information can succeed. If the management do not realize and understand the actual impacts of technology on their business performance, they are not prepared and ready for the large changes that might affect the performance of the whole company.

Aviation sector is high-tech investment in general and characterized with change and uncertainty. Customers have difficulty envisioning how technology can meet their needs. They are not aware of new technologies that are available how those technologies might be used to solve their current problems. That's why it is a complicated problem for

airlines firms to get latest high-tech product and innovations. As already known, delivering high-quality service to customers is the key strategy to survive in the competitive services industries such as airline industries. Service quality influences a businesses' competitive advantage by keeping customer patronage in order to increase market share. That's why airlines businesses have to understand service users' needs and expectations. In practice, most airline businesses measure customers' satisfactions of their service offerings without any knowledge of service users' needs. If there are some misunderstandings in expectations or needs, then serious problems in service implementations can be happened. It is so important for airlines management to take a right decision about customers' wants and needs.

Many countries, especially the developed ones have benefited the advantages of ERP and CRM systems by highly adopting these systems since early 1990s (Malhotra & Temponi, 2010). Developing countries are now adopting the systems like the developed ones. But, regardless of the system advantages, developing countries like Ethiopia have not yet adopted and benefited much from such integrative information solutions (Alemu et al., 2014). In isolated system, different units work simultaneously on different parts of one project. If the information and detail about every completed and in process phase is not monitored at one location, it is difficult to find at which stage of completion does a project actually lie. Non-streamlined processes and non-directional flow of information may create unnecessary time delays in execution of action plans.

According to De Lone and McLean (2003), large scale deployment of the internet and related technologies has profoundly impacted service sector organizations by transforming their product mix, distribution channels and competitive strategies. At the same time, this transformation is unlikely to be uniform because the impacts of technology differ significantly among various segment of service. Davenport (2000) stated that organizations often jump into ERP and CRM projects without clear objectives and strategies. He outline the service sectors organizations which constitute one of the intangible aspects of production has not been subjected to in depth study to explore the

benefit organization achieve by undertaking the integration. Zhang et al (2005) also argue that it may takes time to observe the achievement after proper integration. According to him, the achievement from ERP and CRM integration need to be measured on long term relationship with customer to generate long term benefit through increased customer satisfaction & retention.

Hendricks et al. (2007) stated several problems such as high complexity of the system, lack of knowledge among managers and personnel, low data accuracy, and a lack of support from the software vendors challenged the successful integration of the schemes. According to Hsu and Chen (2004) low involvement of employees, lack of top management support, cultural misfit problem, and ineffective usage of the system will lead to ERP and CRM system integration failure and then lead the whole company to bankruptcy. Elarbi (2001) stated different business units use distinct systems to record their data and the dissonance in the data tracking and storing methods of the systems forbids the company from portraying actual data. According to him, bad data to the management prompts bad business decisions for the company. Alexis (2006) stated, separate processes generate disparate data which downgrades the efficacy of the company to come up with best practices for higher productivity. According to him, each system will need to be maintained, and will require separate functional and technical administrators. Lack of proper integration between the systems of the company to provide timely and accurate information to its internal and external users increase the turn-around times and incur heavy expenses.

According to Ruivoa et al. (2014) many organizations also already have implemented the integrated ERP and CRM system in order to enhance their productivity and improve their service delivery process but they did not use the system to the full extent and fail to satisfy their employees and customers fairly, equally and transparently. He added, since the organization has already spent a considerable amount of money on the system, they don't need to afford a new one. Though they need to identify inadequacy of the existing system and solve the challenges.

Despite the link existing between technology and quality of services, Meuter et al.(2009) calls for more research and Parasuraman et al. (1991) emphasized further investigation into the impact of technology on the service quality process. The existing different research have studied the importance and benefits of using ERP and CRM systems separately and they are limited in addressing the integration between the two IT systems to fully exploit the value of the systems. In Ethiopia, since both systems are fairly new, there are the need for empirical data and comprehensive information which show the value from ERP and CRM integration initiatives for service sector organizations and the future prospect the organizations intend to drive from the system implementation. The researcher, therefore, tried to study in depth the achievements, pinpoint the challenges and scrutinize the prospects of ERP and CRM system adoption, implementation and integration in Ethiopian Airlines.

1.4. Basic Research Questions

With the aim of addressing the general and specific objectives of the study, the entire efforts of the paper revolve around seeking answer to the following questions

1. What are the main success factor the Ethiopian Airlines achieved related to quality service delivery as the result of ERP and CRM systems integration?
2. What are the main challenges of integrating ERP and CRM systems that in turn impede quality service delivery?
3. What the future prospects of ERP and CRM systems integration should have to looks like to facilitate service delivery process
4. What could be the possible solutions to maximize the benefits of ERP and CRM systems?

1.5. Objectives of the Study

1.5.1. General Objective

The main objective of the study is to explore the achievements, pinpoint the challenges and scrutinize the prospects of integrating Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) and analyze their impact on quality service delivery in Ethiopian Airlines.

1.5.2. Specific Objectives

1. Examine the main success factor the Ethiopian Airlines achieved regarding quality service delivery as the result of ERP and CRM system integration.

2. Locate problems, gaps and failings in the ERP and CRM system integration that hindered the achievement of its predetermined objectives and endeavors.

3. Explore what the future prospects of ERP and CRM systems integration should have to looks like to facilitate service delivery process.

4. Suggest the possible solutions to maximize the benefits of ERP and CRM systems

1.6. Significance of the Study

In order to expand the knowledge in the area of ERP and CRM system integration, the first and most obvious research path is to conduct deep studies in the area in order to broaden the literature base which will contribute to the knowledge base in one way or another. As a result, this paper is significant for the following reasons

- ☞ The study will contribute to the body of knowledge by filling the existing knowledge gap in the area of ERP and CRM systems integration in Ethiopia by producing the paper that shows the successes the Ethiopian Airlines achieved and

the way the managers can solve the confronted challenges in the process of implementation and integration of systems, as well as serve as a bench mark paper for further evaluation of the success and failure factor associated with ERP and CRM integration.

- ☞ It will help readers and academicians in understanding of how far the ERP and CRM system integrated in Ethiopian Airlines to facilitate high quality service delivery by overcoming the challenges confronted in the processes of adoption.
- ☞ It will initiate interested researchers to carry out more extensive studies in area.
- ☞ The Ethiopian Airlines will use the findings and recommendations of the study as a feedback to make the service delivery process more efficient and effective.
- ☞ Finally, the information produced from this study is expected to be of some value for decision and policy makers with respect to the use of technology in service delivery process.

1.7. Scope of the Study

ERP and CRM user populations are small since most organizations cannot afford it within reasonable cost. Though, it is not possible to gather data from everybody and all organizations. In addition, due to the limited nature of time and resource, the researcher focused only on exploring the achievements, pinpoint the challenges and scrutinize the prospects of ERP and CRM systems integration and assess their impact on quality service delivery by using SERVQUAL model dimensions such as reliability, tangibility, empathy, assurance and responsiveness in Ethiopian Airlines. Senior executives and middle-line managers' perception of the company are considered as a measurement since they are mostly involved in the process of adoption, implementation and integration of the system. Customers' perception also considered and used as a source of lesson for further improvement.

1.9. Organization of the Paper

This research paper is organized into five chapters in order to provide clarity and coherence on the topic. The first chapter discuses and provide sufficient background on the issue and constitute the statement of the problem, general and specific objectives, research questions, scope as well as the significance of the study. The second chapter holds review of different literatures and presentation of the existing studies and their findings. The chapter also lays out the conceptual framework of the research to designate the variables and their relationships. The third chapter outlines the research methodology of the study. The fourth chapter focus on the analysis of the results and interpretations of the data collected using appropriate charts, graphs and tables. The last chapter present and recapitulate the conclusion and forward appropriate recommendation.

Chapter Two

Literature Review

2.1. Introduction

This chapter presents the literatures reviews of ERP and CRM concepts and their contributions in the process of automation and integration of organizational functionalities and improvements of service delivery process. The review was guided by the objectives that lead the study.

2.2. Enterprise Resource Planning (ERP)

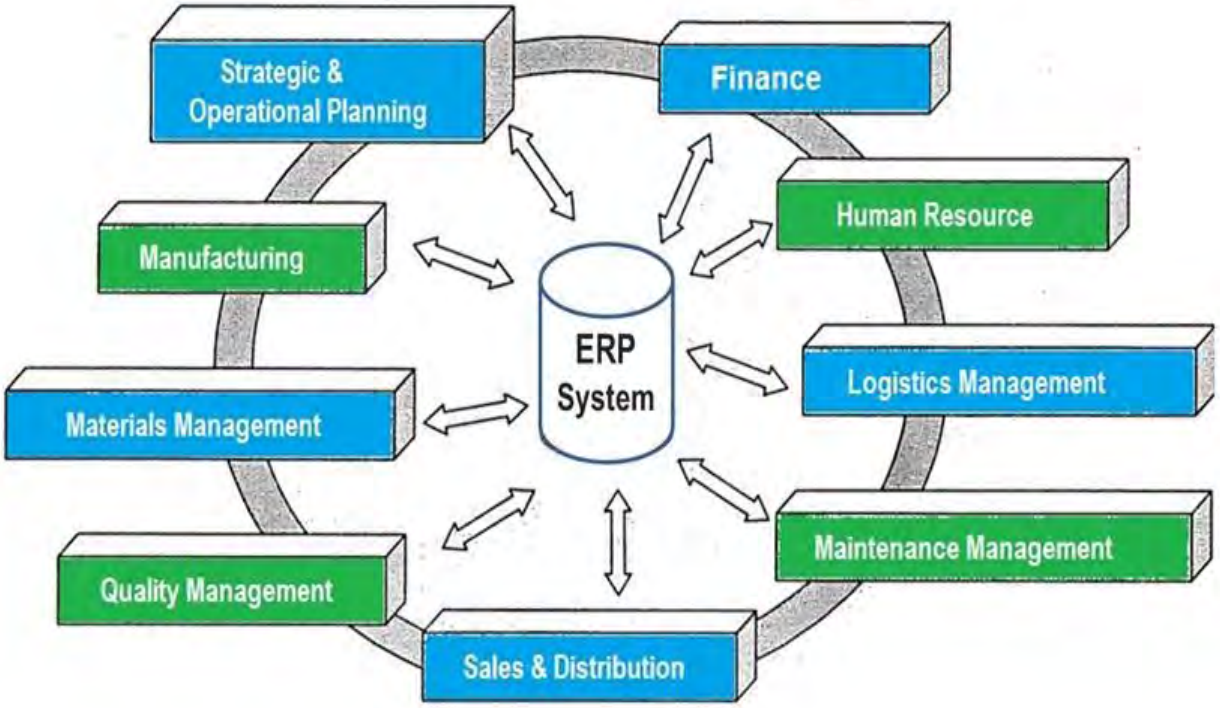
2.2.1. Definitions of ERP

Enterprise Resource Planning (ERP) is a software that attempts to integrate all departments and functions across a company in to a single computer system that can serve all those departments' particular needs (Malhotra and Temponi, 2010). It allows a company to automate and integrate the majority of its business processes, including planning, purchasing, human resource, inventory control, interaction with suppliers and customer and keeping track of orders, to share common data and practices across the entire enterprise, and to produce and access information in a real-time environment. ERP enables decision-makers to have an enterprise-wide view of the information they need in a timely, reliable and consistent fashion (Aslan et al., 2012). ERP systems are designed to enhance organization's competitiveness by upgrading an organization's ability to generate timely and accurate information throughout the enterprise.

Organizations consists of many functional departments, such as finance, HR, purchasing, and logistics, etc. (Ehie and Madson, 2005). Since the applications of information technologies are more and more popular than before, each of these departments typically has its own computer system optimized for the particular ways that the department does its work, not only for office automation, but also for helping people to analyze data and make right decision (Meuter et al., 2009). ERP combines all software programs that serve the needs of specialized functions together into single, integrated software program that

runs off a single database so that the various departments can easily share information and communicate with each other (Ehie and Madson, 2005).

Fig. 2.1 Information Integration through ERP Systems



Source: Alexis, 2006

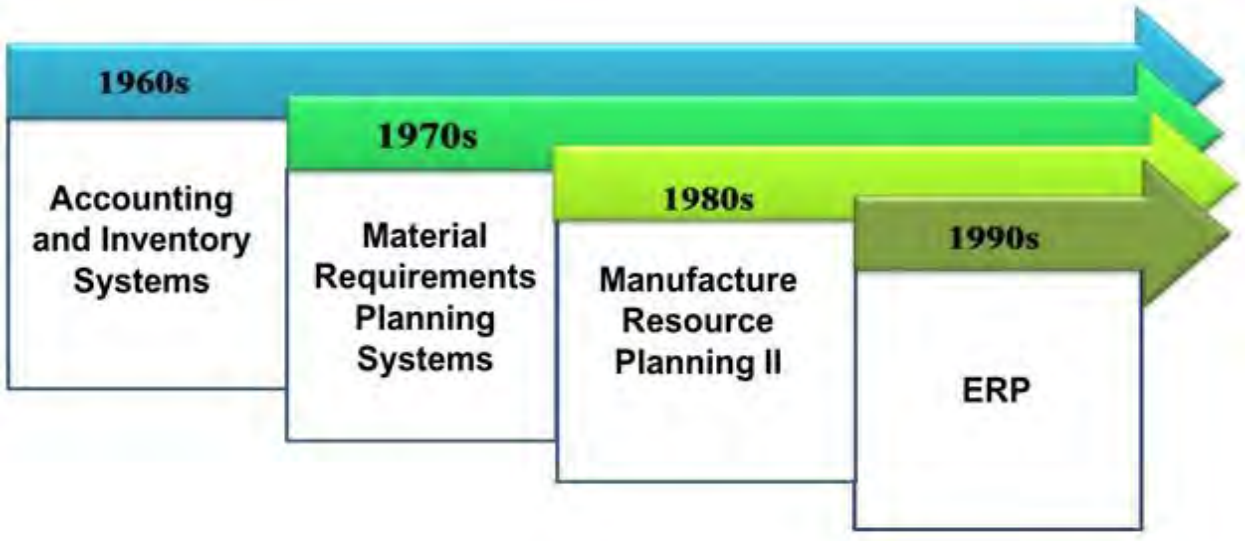
2.2.2. Historical Overview of ERP

The history of ERP began in the 1960s when large manufacturing companies produced Material Requirements Planning (MRP), which was created to keep track of all products and materials across one or more plants, and used to keep track of needed materials (Molla and Bhalla, 2006). A decade later, MRP was extended in the software application called Manufacturing Resource Planning (MRP II), which not only processed the material portion of the equation, but also the planning process, amount of resources available, and other planning requirements. MRPII seeks to improve the efficiency of manufacturing enterprises through integration of the application of information and manufacturing

technologies (Thomas and Michael, 2001). MRPII approach was extended in the 1980s towards the more technical areas that cover the product development and production process (Gargeya and Brady, 2005).

In the early 1990s, the Gartner Group introduced the term Enterprise Resource Planning (ERP), an extension of MRPII with enhanced and added functionality, encompassing functions that are not within the traditional focus of MRPII, such as, decision support, supply chain management, maintenance support, quality, regulatory control, and health and safety compliance (Alexis, 2006). Today, ERP system has become one of the most well-known business software in the market place and an essential part of everyday IT investments for many companies that believe ERP system will provide solutions for their IT problems and therefore provide effective online transactions with the current e-business era. Moreover, one of the significant and global developments of IT is the broad acceptance of ERP system by many companies worldwide which reached today to consider ERP system as the most rapid growing system in operational area (Zhang etal., 2004; Molla and Bhalla,).

Fig. 2.2 History of ERP (ERP Expansion Process)



Source: Thomas and Michael, 2001

2.2.3. ERP Modules

All ERP packages contain several modules (King and Burgess, 2008). The number and features of the modules vary with the ERP package and provide different functionality and support different business functions such as manufacturing planning and scheduling, inventory management, human capital management, storage management, financial administration system, marketing, and order processing. These modules are combined through a common data base system to supports the integrations among different business functions (Hsu and Chen, 2004; and Klaus et al., 2000). ERP SAP R/3 package contains core modules where each module provides a particular functionality such as, materials management, asset management, production planning, plant maintenance, project system, controlling, quality management, industry solutions, financials, human resources, sales, and distribution. Each of these modules formed from sub-modules, for instance the financial module includes sub-modules like accounts payable, accounts receivable, and general ledger (SAP, 2005). Some modules of ERP SAP R/3 description are as follow

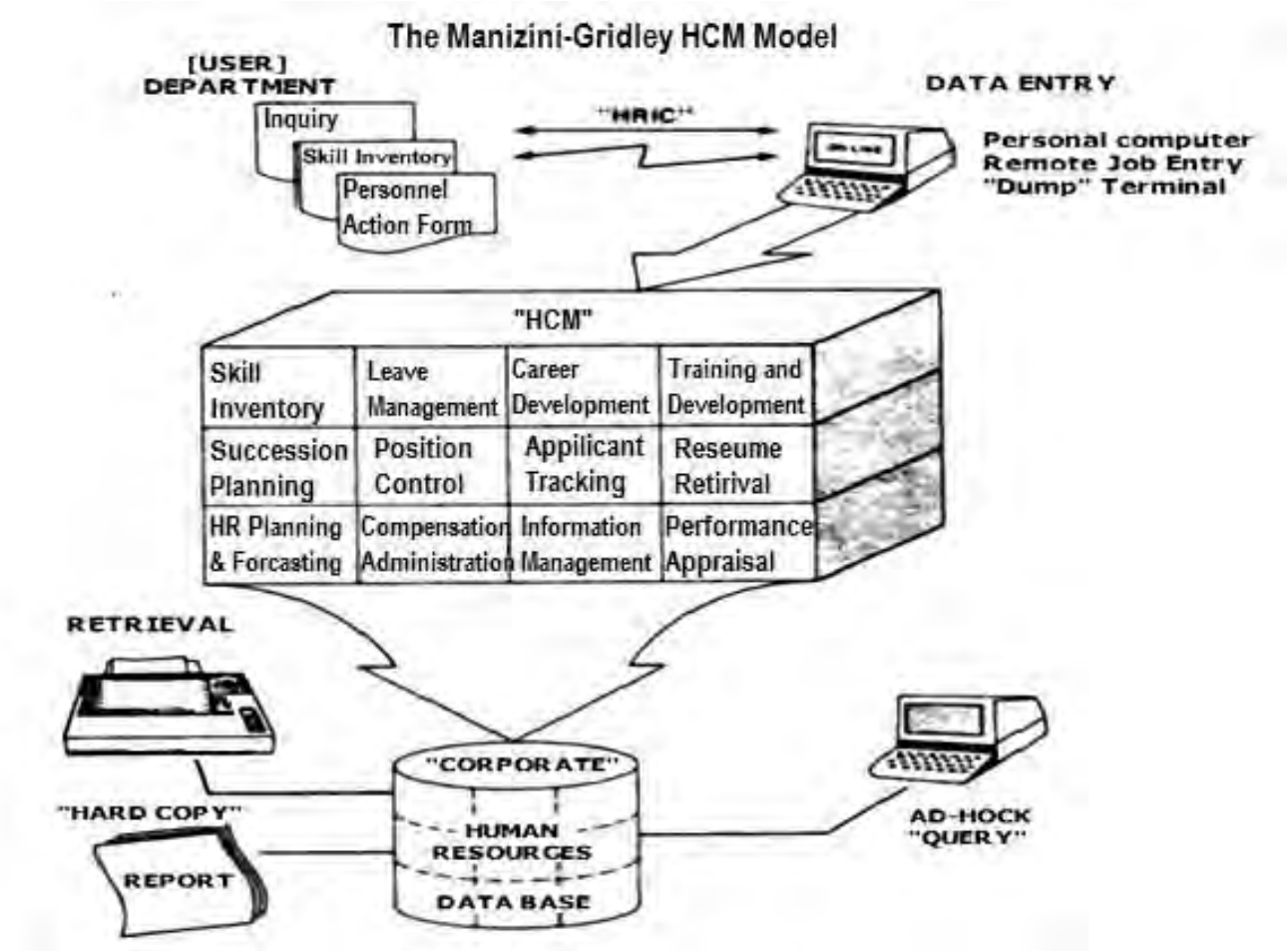
2.2.3.1. Human Capital Management (HCM) Module

Human Capital Management System module is a set of people, procedures and data utilized to store, analyze, distribute and use information of human resources. ERP-HCM goal is to provide accurate information for the use of persons making human resource related decisions and to reduce the manual work of HR expertise (De Lone and McLean, 2003). It helps to abandon paper forms or reports because all information is available through the system. ERP-HCM can support also long range planning, with information for labor force planning, and supply and demand forecasts; staffing with information on equal employment, separations, and applicant qualifications; and development with information on training program costs and trainee work performance (Markus and Tanis, 2000).

With employee data neatly woven into an orderly web of HCM databases, HR executives become free to pursue more critical and creative-thinking projects. The automation of the

data significantly reduces the likelihood of entry errors and discrepancies between records (Teo et al, 2001). The formation of one vast, unified reservoir of employee information allows for more complex and integrated analysis by company executives, facilitating better decision making and greater business efficiency (Alexis, 2006). The company uses the adopted HCM system only for payroll services and employee information management. The Payroll subsystem collects employee time and attendance information from the databases, calculates taxes and other deductions, and automatically generates paychecks according to executive dictate. However, HCM is not only designed to automate HR activities to gain administrative advantages; rather, it can also be used for decision making to provide strategic advantages for the organizations (Molla and Bhalla, 2006).

Fig. 2.3: Human Capital Management System Model



Source: De Lone and McLean, 2003

2.2.3.1. Finance and Controlling Module (FICO)

The Finance and Controlling components of the ERP solutions work hand-in-hand to improve the bottom line and tightly integrated all business areas and all geographic areas. This tight integration includes all the other different modules, from materials management to human resources to logistics (Alexis, 2006). ERP system automatically links related areas; it eliminates the need to repeat procedures. The data enter only once. Within the ERP system, all areas work in concert, creating a new level of efficiency in handling the financial data. The Finance and Control module includes a variety of planning and controlling tools for enterprises following a uniform system of reporting (Thomas and Michael, 2001). It provides comprehensive reports to support most common cost-accounting issues. Controlling module is usually for internal reporting purposes.

2.2.3.1.1. Financial Accounting sub module

The Financial Accounting sub modules provide companywide control and integration of financial information that is essential to strategic decision making. The module collects all the data relevant to financial accounting into an integrated General Ledger (Sullivan and Bozeman, 2010). It provides comprehensive and consolidated financial reports and integrates the different sources of financial data including Accounts Payable, Accounts Receivable, Asset Management and Treasury. It also provides up-to-date or real time information for enterprise-wide control and planning. The Financial Accounting module is for external reporting purposes and it is compatible with the international accounting standards (Alexis, 2006). The financial accounting system contain sub module such as General Ledger, Accounts Receivable/ Payable, Special Ledgers, Fixed Asset Accounting, Legal Consolidation.

Fig. 2.4. Finance and Controlling module function

Source: www.sap.com

2.2.3.1.2. Investment Management sub module

Investment management provides extensive support for investment processes right from planning through settlement and facilitates investment planning and budgeting at a level higher than that needed for specific orders or projects (Zhang et al., 2005). Investment management provides tools to plan and manage the capital spending projects right from the earliest stage.

2.2.3.1.3. Financial Controlling sub module

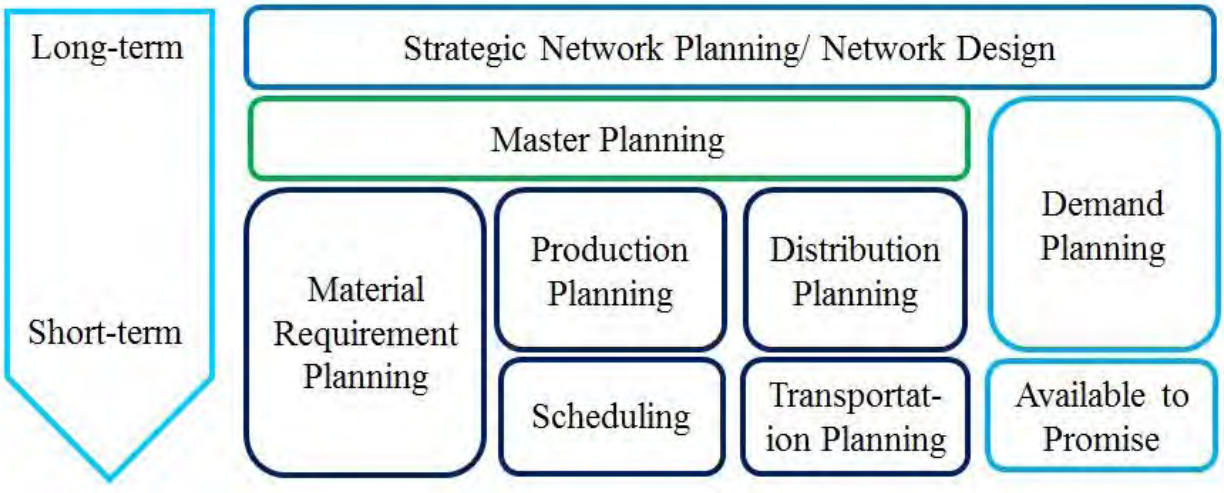
The financial controlling system gathers the functions required for effective internal cost accounting. It offers a versatile information system with standard reports and analysis paths for the most common questions (Alexis, 2006).

2.2.3.3. Advanced Planning and Scheduling (APS) Module

Planning is the core of most organizations and has a direct impact on their operational costs, revenue and customer service level (Stadtler and Kilger, 2007). Every day, many decisions are made about how to utilize scarce resources on a strategic, tactical, and operational level (Chen et al., 2012). According to Consortium PSLX (2005), Advanced Planning and Scheduling (APS) is a system and methodology in which decision-making, such as planning and scheduling for industries, is federated and synchronized between different divisions, with in enterprises, to achieve total and autonomous optimization.

Decision making is perceived as a process of determining information related to planning and scheduling of business activities with in an enterprise (APICS, 2008). This process encompasses all the business activities that create and manage information required for planning and scheduling. Organizations must strike the right balance between operational efficiency on the one hand and employee and customer satisfaction on the other (Elarbi, 2001). The five main components of APS systems are (1) demand planning, (2) production planning, (3) production scheduling, (4) distribution planning, and (5) transportation planning (APICS, 2008).

Fig. 2.5: APS Module functions



Source: Adapted from Stadtler and Kilger, 2007

2.1.3.4. Supply Chain Management System (SCM) Module

A supply chain is a network of suppliers, factories, warehouses, distribution centers and retailers through which raw materials are acquired, transformed, produced and delivered to the customer (Rai et al., 2006). The supply chain consists all the activities associated with the flow and transformation of goods from the raw material stage, through to the end user, as well as the associated information flows. Supply chain management system can be regarded as a type of distributed information management system, of which agent technology provides the ultimate in its development (Akkermans et al., 2002). Information Technology application has brought enormous opportunities to supply chain management and making it grows at an even faster pace. Role of information is crucial and drives the entire supply chain system. For many companies, it has become clear that a supply chain that flows information and material effectively can be a significant differentiator, the competitive winner (Sheth, 2000).

2.1.4. Benefit of ERP Implementation

2.1.4.1. Business Integration

ERP packages integrate the automatic data exchange among application that is possible among the related business components (Zhang et al., 2005). Conventional company information systems were aimed at optimization of independent business function in business units that are almost weak in terms of the communication and integration of information that transcended the different business functions. Through ERP packages, the data of related business function is automatically updated at the time a transaction occurs. For this, it is simple to grasp business details in real time, and carry out various types of decisions in a timely manner, based on that information (Thomas and Michael 2001).

2.1.4.2. Increased Flexibility

Flexibility is a key issue in the formulation of strategic plan in companies. Flexibility means the way of quickly changing something that is being done, or completely changing

to adjust to new product designs (Kwahk and Ahn 2010). Since competition is growing, companies must learn to respond more rapidly to customers' wishes as well as changes in the market and need to design new products or redesign old products quickly and efficiently (Dezdar, 2012). Only then will companies have the chance to capitalize on opportunities while they are available. To cope with company globalization and system unification, flexibility is essential, and has major advantages, not simply for development and maintenance, but also in terms of management. ERP enhance flexibility.

2.1.4.3. Better Analysis and Planning Capabilities.

By enabling the comprehensive and unified management of related business and its data, organizations become possible to fully utilize many types of decision support systems and simulation functions (Hendricks et al, 2007). Real time filing and analysis of data from a variety of dimensions is able to give the decision makers the information they want; thus enabling them to make better and informed decisions (Alexis, 2006).

2.1.4.4. Better Customer Satisfaction

Customer Satisfaction means meeting or exceeding customers' requirements for a product or a service (Zeritu, 2010). ERP systems have proved that they can produce goods at the flexibility of make-to -order approach without losing the cost and time benefits of made- to -order operation. This means that customer will get individual attention and the features that want, without spending more money or waiting for long periods (Wilson 2008).

2.2. Customer Relationship Management (CRM)

2.2.1. Concepts of CRM

Customer Relationship Management is a broad term that covers concepts used by companies to manage their relationships with customers, which may include attracting the customer, analyzing the customer, retaining and satisfying the customer (Bose, 2012). It is an integrated management system focused on customers and prospective customers.

The CRM approach contains the processes that build a business management model centered on a 360º approach to the customer (Payne and Frow, 2005). The CRM platforms build on customer-centric processes, disseminated throughout the organization. CRM extensively uses information related to the client by integrating the areas of marketing, sales & service & verifying the creation of customer value (Parvatiyar and Sheth, 2001).

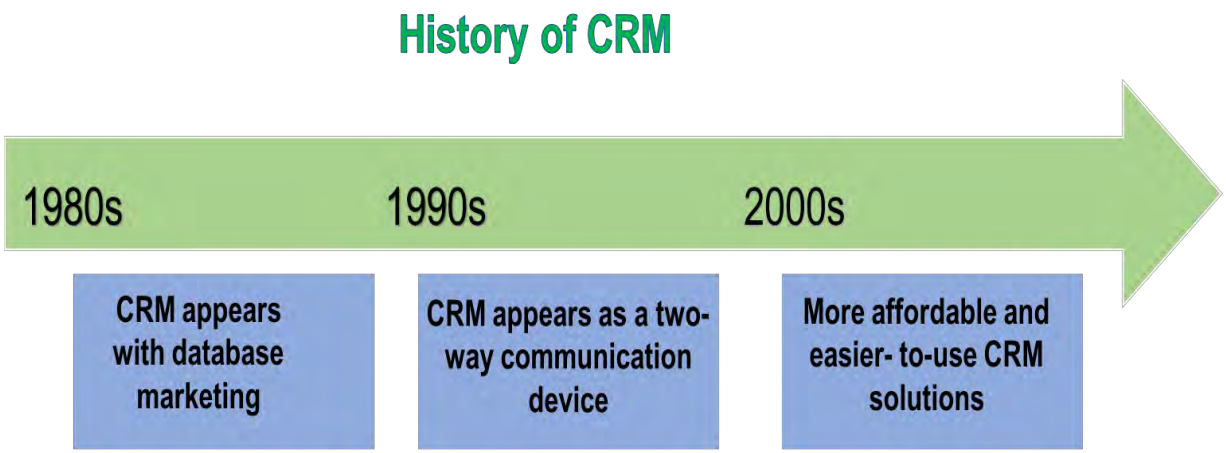
In order to build a smarter CRM strategy, the technology responds only to the company's strategy by helping to capture data about the client and external sources and consolidate that data in a central data-warehouse. CRM system provides the company with integrated and effective means of meeting, recognizing and caring for the client in real time. CRM applications transform the data collected into information that allows a better understanding of the customer profile (Rigby and Ledingham, 2004). The management processes in which CRM is based are undoubtedly at the forefront in terms of strategy and marketing, and also at the economic and financial level. Companies that are thoroughly familiar with their customers can create custom responses, anticipating their wants and needs and answering their major wishes (Lovelock et al., 2001).

In a recent Harvard Business Review article, Gulati and Oldroyd (2015) observe that the implementation of CRM systems serve the purpose of getting closer to customers, and the company that engaged in a learning journey about the customer and about the business improved the way of doing business. The authors identify four stages in the evolution of a successful CRM implementation: 1) gathering information; 2) gaining insight from customers' past behavior; 3) learning to predict future customer behavior and 4) real time response to customer needs. This evolutionary and transformational process takes time, resources, and patience, but the implementation of each of the stages should provide visible end results. Furthermore, the deep understanding of the customer provided new levers for future growth (Gulati and Oldroyd, 2005; Gupta and Lehmann, 2005).

2.2.2. Evolution of CRM

CRM is based on the principles of relationship marketing (RM) which is regarded as one of the key areas of modern marketing and has generated great research interest (Sheth, 2000). Grönroos, (1997); Parvatiyar and Sheth, (2001) view RM as a paradigmatic shift in marketing. The increased interest in one to one marketing raised the potential for shifting from a mass to individualized or one-to-one marketing (Peppers & Rogers, 1993). With its roots in RM, CRM is a relatively new management discipline. Parvitiyar and Sheth (2001) point out the two terms are often used interchangeably. Contributors to this literature emphasize the key role of multiple stakeholders (e.g. Christopher et al., 1991; Gummesson, 1999). Customer relationship based approaches have been increasingly advocated over the last fifteen years (Webster, 2015).

Fig. 2.6 History of CRM



Source: Gurmnesson, 1999

2.2.3. Types of Customer Relationship Management (CRM)

According to Bose (2002), there are three types of Customer Relationship Management

2.2.3.1. Collaborative CRM

Collaborative CRM is designed to share information on various types of interactions that customers have with the organization and its different departments, either through direct interactions, by email, by letter or by fax. It is a communication with customers and covers direct interaction with customers including feedback and issue reporting. Collaborative CRM greatly improves services provision process.

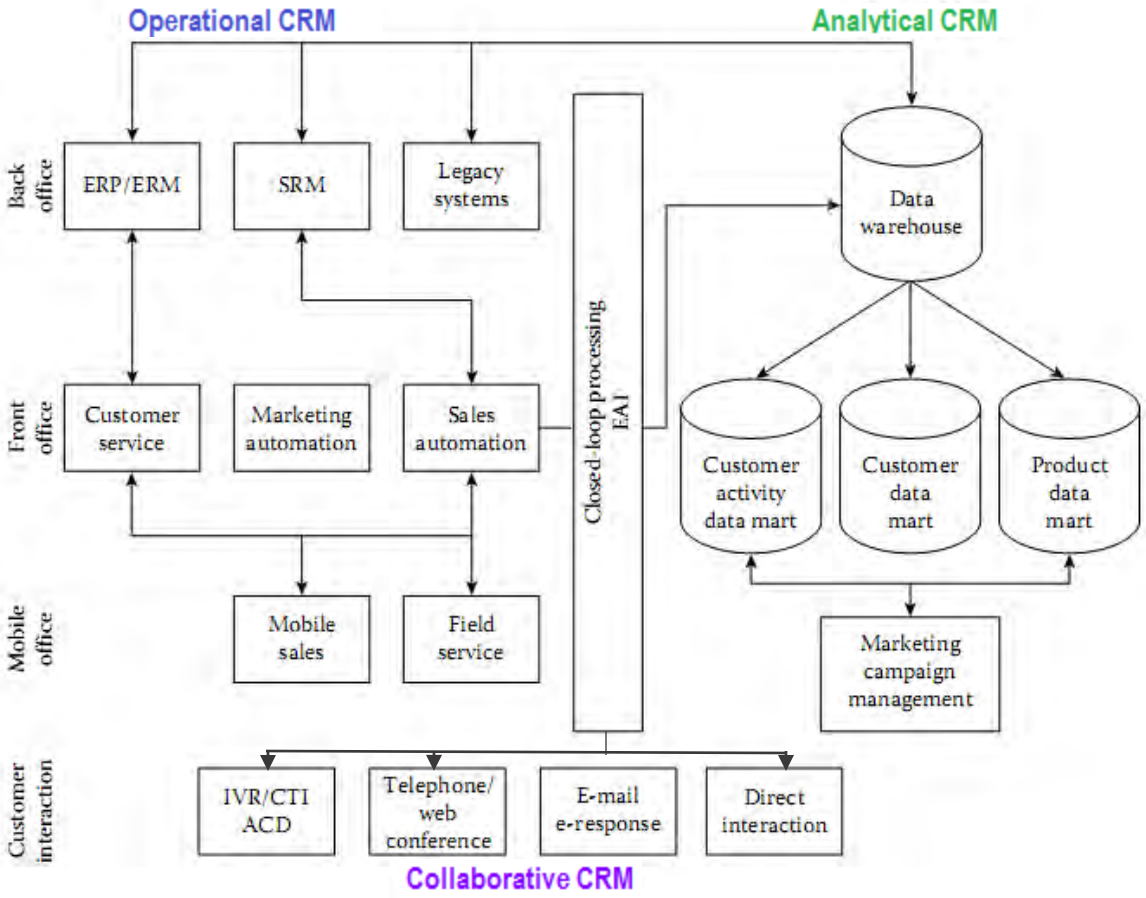
2.2.3.2. Analytical CRM

Analytical CRM Functions include performance analysis and business intelligence. The analytical CRM addresses the analysis of customer data for a host of different purposes. In general it is used to design and execute targeted marketing campaigns that optimize marketing effectiveness. Analytical CRM takes into account product and service decision making, pricing and new product development (Mendoza et al, 2007).

2.2.3.3. Operational CRM

The operational CRM application interacts directly with the customer by integrating the front office and back office. This type of CRM includes the functional areas of sales force automation, contact management, automation of marketing activities and customer service. It generally refers to products and services that allow an organization to take care of their customers. It provides support for various business processes, which can include sales, marketing and service.

Fig. 2.7 Types of CRM



Source: Sheth, J. 2001

2.2.4. Benefits of CRM Implementation

Customer relationship management (CRM) explicitly recognizes the long-run value of potential and current customers, and seeks to increase revenues, profits, and shareholder value through targeted marketing activities directed toward developing, maintaining, and enhancing successful company and customer relationships (Gronroos, 1994). In order to endure long-term success, the role of CRM in a firm is to contribute to building strong and valuable customer portfolio. CRM is an integral part of a company's strategy, and its input should be actively considered in decisions regarding the development of organizational capabilities.

Boulding et al., (2005) also argue that CRM improves business performance in a wide variety of service settings. A striking example is described in a case study by Ryals (2005), showing that a business unit was able to achieve a 270 percent increase in business unit profits above target by implementing some straightforward CRM procedures. Boulding et al. (2005) stated that, holding fixed the level of CRM investment, the effectiveness of CRM activities depends on (a) how CRM is integrated with the existing processes of the firm and (b) the firm's preexisting capabilities. In other words, organizations that have already developed learning capabilities and effective information processes are more likely to improve their business performance by adopting CRM systems. They are able interpret information correctly and act on it in a manner to increase value for both the customer and the firm. A brief analysis of the literature on CRM systems points, historically, to implementation problems. For example, Gartner Group (2003) found some 70% of CRM projects resulted in either losses or no bottom-line improvement. As CRM vendors have largely driven the initial emphasis on CRM, they must be seen as at least part of the problem with respect to the failure of many CRM systems. However, more recent work analysis (Rigby and Ledingham, 2014) has shown companies are now reporting improved satisfaction with their CRM investments.

2.2.4.1. Customer Acquisition

Customer acquisition is a first step in building a customer base. Targeting, acquiring, and keeping the right customers entails a consideration of fit with current firm offering, future profitability, and contribution to the overall business risk (Benkenstein and Stuhldreier, 2004). Many firms do not employ appropriate criteria to identify profitable customers and their programs are broadly communicated to potential customers who may or may not be profitable. Customer–product fit becomes important because campaigns aimed toward new customers that change the positioning of a product can alienate existing customers. Mittal and Kamakura (2001) discuss the nature of the relationship of the customer and the brand, finding that customers with different characteristics have different satisfaction thresholds, and, therefore, different probabilities of repurchase.

2.2.4.2. Customer satisfaction

Customer satisfaction has important implications for the economic performance of firms because it has the ability to increase customer loyalty and usage behavior and reduce customer complaints and the likelihood of customer defection (King and Burgess, 2008). The implementation of a CRM approach has an effect on customer satisfaction and customer knowledge for a variety of different reasons. By accumulating information across customer interactions and processing the information to discover hidden patterns, CRM applications help firms customize their offerings to suit the individual tastes of their customers (Bose, 2002). This customization enhances the perceived quality of services from a customer's viewpoint, and because perceived quality is a determinant of customer satisfaction, it follows that CRM applications indirectly affect customer satisfaction.

2.2.4.3. Customer Retention

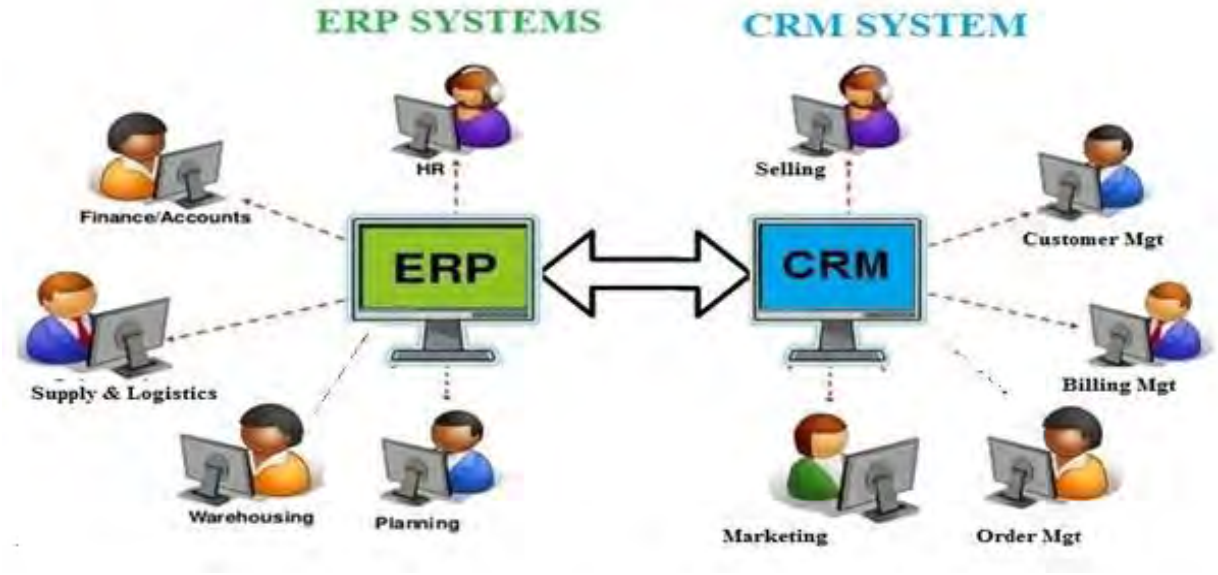
Customer retention is often easier and cheaper than customer acquisition, especially in stable markets with low growth rates. An organizational emphasis on customer retention also makes sense when discount rates are low (Gupta and Lehmann, 2005). Boulding, (2005) confirms that consumers with higher satisfaction levels and better price perceptions have longer relationships with firms. Organizations that have long-term relationships with customers are able to achieve significant growth and higher profitability through differential reductions in discretionary expenses (Kalwani and Narayandas, 1995).

CRM applications also enable firms to provide timely, accurate processing of customer orders and requests and the ongoing management of customer accounts (Parvatiyar and Sheth, 2001). Both an improved ability to customize and a reduced variability of the consumption experience enhance perceived quality, which in turn positively affects customer satisfaction. Furthermore, CRM applications also help firms manage customer relationships more effectively across the stages of relationship initiation, maintenance, and termination (Gupta and Lehmann, 2005).

2.3. ERP and CRM Integration

Integrating ERP and CRM system ultimately provide insight, creating a single, and 360-degree view of organizational profitability (Hendricks et al, 2007). Back office and front office will no longer be isolated, but working hand-in-glove to anticipate customer demand rather than react to it. Using integrated CRM-ERP solutions, organizations gain access to comprehensive and consistent data about customers from throughout the organization using their accustomed application dramatically (Gargeya & Brady, 2005). This integrated information enables users to view combined financial and nonfinancial information about customers from within the CRM application, regardless of where the data is generated or stored. The integrated solutions also bring together previously disconnected business processes by automating complex, multistage processes in an end-to-end manner (Huang and Palvia, 2001). They employ workflow management and can automatically trigger the downstream business process, passing data seamlessly from one application to the next without manual intervention. Improved integration means better access to organizational data for service thereby eliminating repeated calls to customer service (Yu, 2008).

Fig 2.8 ERP and CRM Integration

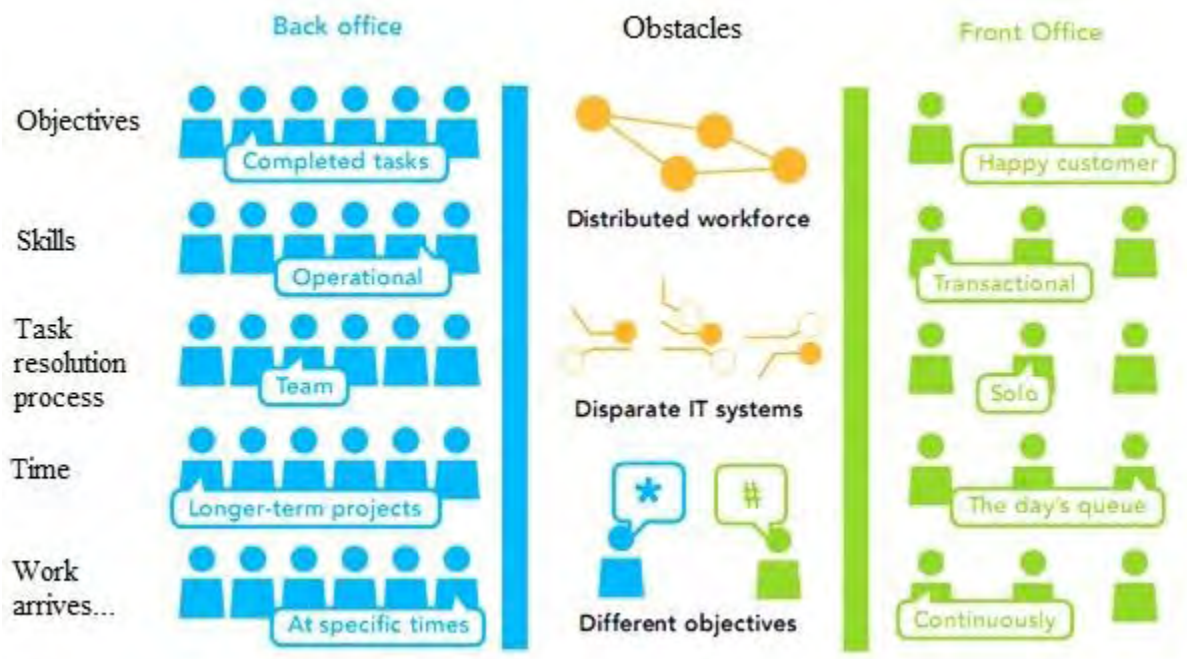


Source: Adopted from www.crmswitch.com

The front office includes departments, such as the contact center, marketing and sales, which have direct contact with customers. They operate in real-time as they pursue immediate resolution, so the work process usually requires just one person. Furthermore, their work is distributed throughout the day, so no backlog develops other than call or customer queues (www.aspect.com).

By contrast, back office employees usually perform very manual and routine work which doesn't involve having direct contact with customers. Their primary product is a work item or task that may require many different people or processes; therefore, a wide variety of skillsets are required. Back office tasks may take hours, days, or even weeks to complete. Since work often arrives at specific times, such as at the end of the month, significant backlogs can occur if staffing is not monitored and adjusted on a daily basis.

Fig. 2.9 Back Office and Front Office Integration



Source: www.aspect.com

2.3.1. Types of CRM and ERP Integration

According to Ruivoa et al., 2014, and Ranganathan and Brown, 2006, there are different types of CRM and ERP integration, the main are:

2.3.1.1. System Integration

Systems integration is the composition of a capability by assembling elements in a way that allows them to work together to achieve an intended purpose. System integration is defined as the process of bringing together the component subsystems into one system and ensuring that the subsystems function together as system (Ranganathan and Brown, 2006). Systems integration creates a mission capability by composing subcomponents of the capability. It is the logical next step between design and development, and testing, verification, validation, and deployment. The system integrator brings together discrete systems utilizing a variety of techniques such as computer networking, enterprise application, business process management or manual programming.

2.3.1.2. Process Integration

Process integration is the extent to which the business process of the two systems are tightly linked and standardized into what could be described as a single information system. Although the system integration facilitates the business process integration, by itself does not guarantee firm's high levels of business process. Process integration streamline and integrate internal business processes to improve efficiency of the firms (Ruivoa et al 2014).

2.3.3. Benefit of ERP and CRM Integration

CRM and ERP integration enhance the organizations operational effectiveness if properly implemented. CRM is a front-office system that centralizes all information about external marketing, manages the sales pipeline, automates customer service, tracks information about customers, as well as creates dashboards & reports on this data (Park et. al., 2004). ERP systems automate and manage back-office business activities, such as accounting,

purchasing, human resources, payroll, manufacturing, distribution, and more (Elarbi, 2001). By developing automated workflows that span both CRM and ERP applications, organizations can expand on the individual capabilities of their ERP and CRM systems to enable straight through processing (Dezdar, 2012). A user can then initiate a transaction, automatically triggering all related business processes as appropriate and passing the transaction seamlessly from one application to the next without the need for extensive manual intervention. Allowing staff to use proven, repeatable processes improves productivity by eliminating time-intensive manual activities (Park et. al., 2004). Straight-through processing improves productivity by reducing or removing the need to rekey information from one system to the next, as orders generated within the CRM system are passed automatically through to the ERP system for processing and fulfillment.

2.3.4. Challenges of ERP and CRM Integration

ERP and CRM packages, if chosen correctly, implemented and integrated judiciously and used efficiently, will raise the productivity and profits of companies dramatically. But many company fails in this because of wrong product, haphazard implementation and inefficient or ineffective usages (Hendricks et al, 2007). Traditionally, it has been difficult to integrate CRM and ERP systems because of the vastly different architectures and the lack of standards for exchanging data between the systems. Older, point-to-point integration methods can be costly, complex, and risky (Payne and Frow, 2005). Even when a company does integrate these systems, future CRM or ERP upgrades can easily render the integration inoperable.

2.3.4.1. Lack of Training

Lack of training in existing hardware/software and related technologies and inadequate education regarding new developments in Information System are critical barriers to success. Training needs occur at two levels in the organizations: firstly is the training and development of Information System staff, and secondly training and education of user department personnel in appropriate technologies (Teo et al., 2001).

2.3.4.2. No centralized data warehouse

When different departments use different IT systems that don't share a single, centralized data warehouse to store information, information must be manually reentered into each system, resulting in wasted time and potential rekeying errors (Bennett et al., 2010). Alternatively, organizations must set up a separate data mart to take data from the different systems in use and normalize that data so that it appears in a common format.

2.3.4.3. No single point of information

Employees who want access to complete information about the customer's interactions with the company must turn to two entirely different systems—the CRM system and the ERP system to answer customers questions. Employees must spend time learning two systems and then take extra time to toggle between them. The organization must also purchase licenses for two solutions for these users, rather than a single license for a system that enables users to access data from the other system (García-Sanchez and Pérez-Bernal, 2007). Purchasing additional licenses increases total cost of ownership.

2.3.4.4. Lack of Funding

Funding is a problem in two areas in the organizations. The first is lack of funding to acquire, update, and maintain the systems; and the second is the specific funding opportunities that create uneven or inappropriate investment in particular technologies especially in donor funded organizations (Gardner et al., 2007).

2.3.4.5. Poor ICT Infrastructure

It is expensive to build an infrastructure and to maintain the equipment update. Likewise, there is low connectivity in the third world countries where the communication bandwidth is slow and access to the internet, the job portal and downloading application forms is a problem (Kovach and Cathcart, 1999). The overall Network connectivity continues to pose a challenge especially in the rural areas.

2.3.4.6. Inability to track customer interactions

Since information is stored in two systems, no one single point of reference or single version of the truth exists for information about customers' interactions with the organization. This increases the likelihood of errors that can be time consuming to correct; for instance, when entering a customer order, the sales representative using a standalone CRM system won't have access to customer credit information and will be unaware of any credit holds (Thomas and Michael, 2001).

2.3.4.8. Inability to target customers effectively

Target marketing is generally recognized as a way to reach the right customers with the right offers, often for purposes of up-selling and cross-selling, in a highly efficient manner. In order to perform target marketing, organizations need information about their customers, the products they've purchased in the past, the amounts they've spent, and so on (Payne and Frow, 2005). When information is spread across different applications, organizations are either unable to perform target marketing at all or must use time-consuming manual processes to obtain the necessary information.

2.3.4.7. Information Insecurity

The challenge is to keep information protected all the time from being accessed by unauthorized persons, system hackers, web spam and document viruses. There are inadequate technical and operational skills within the Public service and levels of computer literacy of users are very low (Reddic, 2009).

2.4. Service Concepts

The concept of service refers to the outcome that is received by the customer and is made up of a portfolio of core and supporting elements which can be both tangible and intangible (Lovelock and Wirtz, 2004). It is a description of the service in terms of its features and elements as well as in terms of the benefits and value it intends to provide to customers (Sheth, 2000). There are some major differences between services and goods. The nature of services is intangible whereas goods are tangible. Since services are intangible, measurement of service quality can be more complicated. Service quality measures how much the service delivered meets the customers' expectations. Perceived service quality is a result of the comparison of perceptions about service delivery process and actual outcome of service (Zeritu, 2010). Since a service process leads to an outcome resulting in the customer being either satisfied or dissatisfied with the service experience, it is so importance that the service organizations should have to pay attention to designing the system by which service concepts are produced and delivered to customers (Brown et al., 1994).

Today, service faces many challenges in its efforts to become a truly representative, competent and democratic instrument and to play its proper role in the reconciliation, reconstruction and development process of the country. To fulfill this role effectively, the service sectors are being transformed to implement government policies according to the policy framework contained in the transformation of the service delivery. In order to ensure that service delivery is constantly improved, each departments should be required to outline their specific short, medium and long term goals for service provision (Park, et al., 2004). Improving delivery of services means redressing the imbalances of the past and, while maintaining continuity of service to all levels of society, focusing on meeting the needs of the majorities (Spreng and Singh, 1993). Knowing what the customer wants and providing it quicker, better and cheaper than competitors, is essential to business success (Wilson 2008).

2.4.1. Service Quality

Service quality is an overall judgment similar to attitude towards the service and generally accepted as an antecedent of overall customer satisfaction (Zeithaml and Bitner, 1996). Parasuraman et al. (1988) have defined service quality as the ability of the organization to meet or exceed customer expectations. It is the difference between customer expectations of service and perceived service (Zeithaml et al., 1990). Perceived service quality results from comparisons of customers' expectation with their perceptions of service delivered (Zeithaml et al., 1990). If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman et al., 1985). Sasser et al. (1978) defined the factors that raise the level of service quality such as security, consistency, attitude, completeness, condition, availability, and training of service providers. Besides this, physical quality, interactive quality, and corporate quality also affected the service quality level.

Authors Gronroos et al. (1994) suggest that service quality is a key aspect that differentiates service offers and helps build competitive advantage. Today, service sector organizations need an IT modernization that enables them to transform legacy applications into an open-system, service-oriented architecture, so they can take advantage of new technology while preserving the business content of existing applications (Park et. al., 2004). They need an approach that lets them easily plug pieces together as though they were puzzle pieces as well as add and upgrade pieces at will. Understanding exactly what customers expect is the most crucial step in defining and delivering high-quality service (Zeithamletal., 1996). Expectations serve as a major determinant of a consumer's service quality evaluations and satisfaction. After delivering the services, service providers should monitor how well the customers' expectations have been met.

2.4.2. Service Quality Dimensions

Service quality consists of five dimensions: tangibles (appearance of physical facilities, equipment, personnel and written materials), reliability (ability to perform the promised service dependably and accurately), responsiveness (willingness to help customers and provide prompt service), assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence), and empathy (caring and individual attention the firm provides its customers). Reliability is considered the vital core of service quality. Perceived quality has been defined as a form of attitude, related but not equal to satisfaction, and fallout from a consumption of expectations with perceptions of performance. Consequently, having an improved understanding of consumers‟ attitudes will facilitate knowing how they perceive service quality (Parasuraman et al., 1988).

2.4.3. Service Quality Models

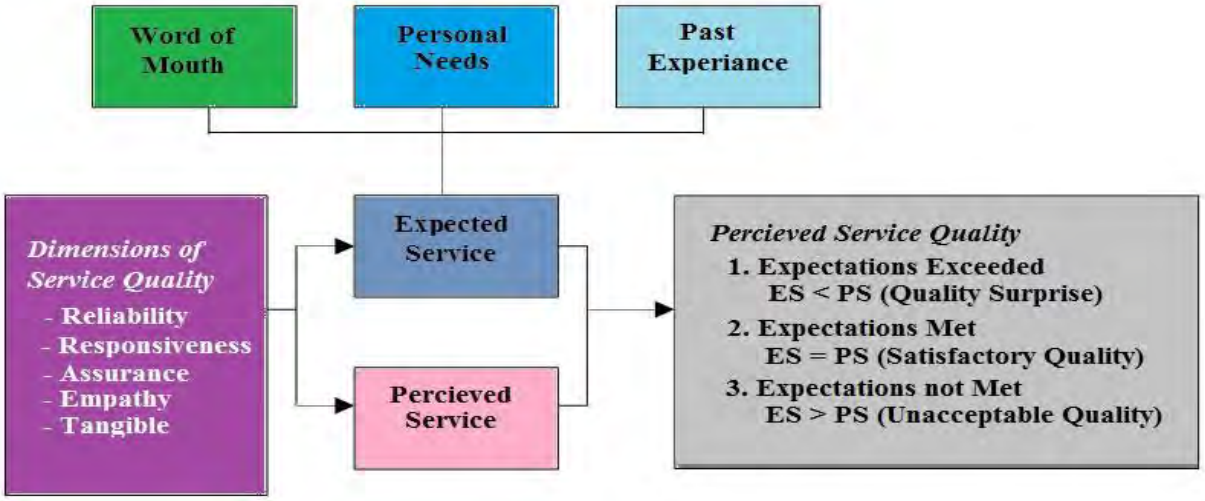
Grönroos (1984) developed the first service quality model and measured perceived service quality based on the test of qualitative methods. He used technical quality, functional quality, and corporate image in the model as the dimensions of service quality. Technical quality is about customer evaluations about the service. Functional quality which is more important variable for consumer perceptions and service differentiation than technical quality refers how consumers take the service. Technical quality is interested in what was delivered whereas functional quality is interested in how the service was delivered.

In 1988 Parasuraman, Zeithaml, and Berry developed “SERVQUAL” to measure service quality based on some factors that come from focus groups. These factors are called as “tangibles, reliability, responsiveness, assurance, and empathy” and 22 scale items regarding expectations and performance. SERVQUAL with ıts five basic factor have been tested through numerous empirical studies in various sector (Bigne et al., 2003; Liou et. al., 2010). SERVQUAL is based on the idea that quality is a subjective customer evaluation, as service is not a physical item, but an experience (Parasuraman etal., 1988). So SERVQUAL scale is commonly used to measure service quality in service businesses.

Customers evaluate the quality of service by determining whether there is any gap between their expectations and perceptions. The scale is useful to determine customers' expectations and perceptions and so it allows managers to better understand customers' evaluations of service quality (Parasuraman and Berry, 1993).

Service Quality Model of Glied, (2000) is the other models of service quality, which indicates that the expectations of the customer depend on the five determinants market communication, image, word of mouth, customer needs and customer learning. Experiences depend on the technical quality (outcome) and the functional quality (process), which is filtered through the image. Both expectations and experiences can create a perception gap. While the Gap Model propounded by Parasuraman et al., (1990) was a slight modification of Gonzalez Padin and Romon. (2005) model and says that the expected service is influenced by the word-of-mouth, the personal needs, past experience and also by the external communication to customers. A perception gap can appear between the expected service and the perceived service. Petrick, (2009) identified ten determinants of service quality that may relate to any service: Competence, Courtesy, Credibility; Security; Access; Communication, Understanding the customer; Tangibles; Reliability; Responsiveness. Later they were reduced to five to include Tangibles; Reliability; Responsiveness; Assurance and Empathy.

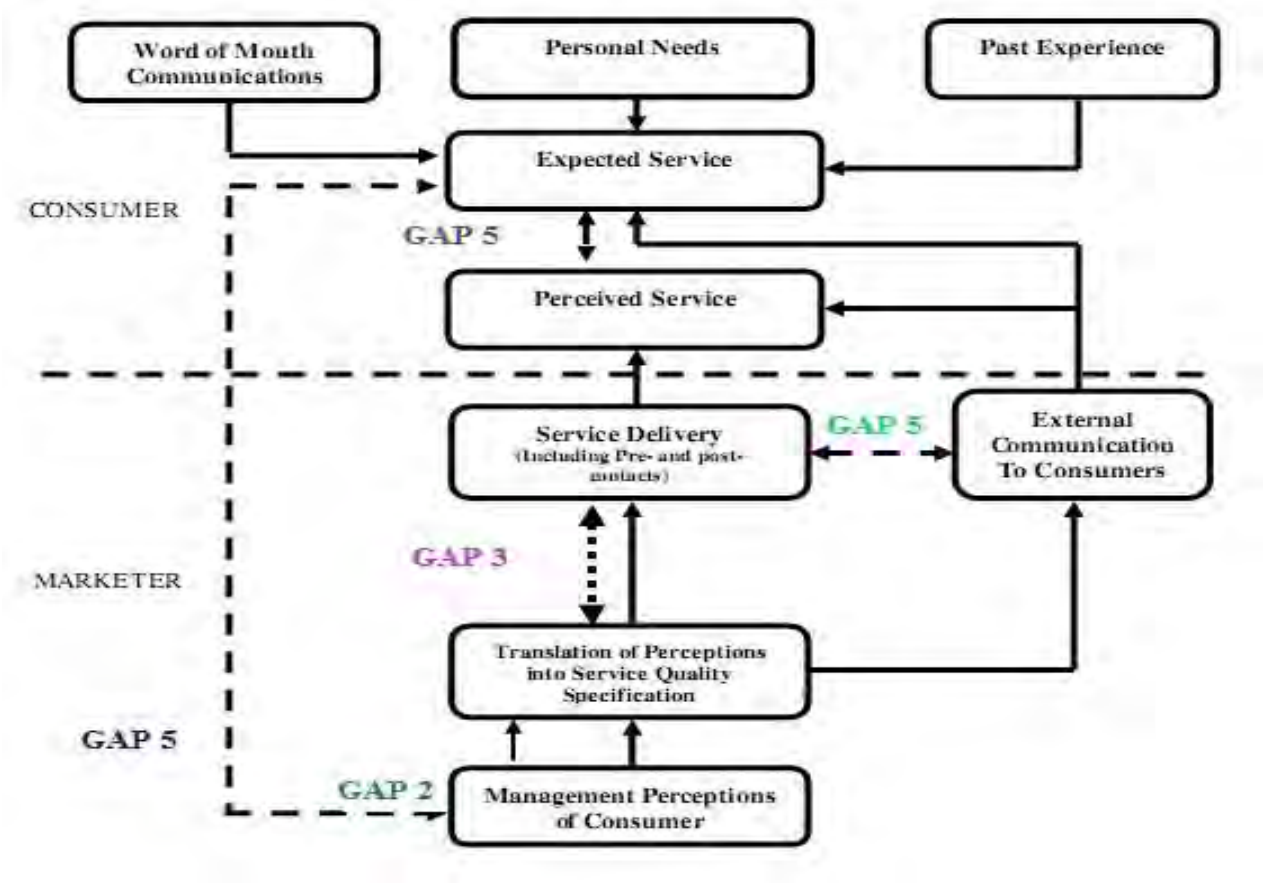
Fig. 2.10 SERVIQUAL model



Source: Adapted from Parasuraman et al., 1988

The idea behind the SERVQUAL model (Parasuraman et al, 1988) is that a service provider tests the service quality by using several statements about the five predictors of service quality. Eventually possible gaps between expected and delivered service quality could be identified. There are five possible gaps:

Fig. 2.11 GAP Analysis Model



Source: Adapted from Parasuraman *et al*., 1988

Gap 1: Not knowing what the customer want. The management of a company does not exactly know their customer's demands. This can be a result of insufficient use of market information, too little contact b/n the management & customers or too many hierarchical layers, which holding back information, between the salesman and the management.

Gap 2: Wrong service guidelines. Even if the management knows the needs of their customers, it is not obvious that strategic principles are properly converted into specifications for the employees which provide the service. There could be insufficient commitment to improve the quality of the service or perhaps there is a lack of confidence of the feasibility of service improvement. Besides an insufficient standardization of tasks or a lack of service objectives can be a barrier.

Gap 3: Difference between specifications & performance. This gap arises when employees who should provide the service according to guidelines do not follow the guidelines. There could be several causes. Uncertainty of their role in the process is an important factor. Employees could feel that they are not able to cover all the customer needs. Role conflicts will arise. Another cause is that sometimes experience of employees do not reflect the demand of the job. Or they do not have access to technologies.

Gap 4: There are promises that could not be delivered. This gap is often caused by insufficient communications between the employees or advertising style and customers. Sometimes the capabilities of the serving processes are overestimated.

Gap 5: The customer has a difference in expectations of the service quality and the reality of the quality.

Cavana et al (2007) stated that reliability do not have any significant relationship with customer satisfaction, while responsiveness, assurance and empathy have a strong relationship. Kao (2009) suggested that service quality and its dimensions have a direct bearing on customers' evaluation of an organization and the intentions to choose the service provider. Lai (2004) stated that there is a significantly positive relationship between the quality of the service and customer satisfaction, as well as with future purchase intentions of customer

Table 2.1: SERVQUAL

Dimensions	Items
Tangibles: Physical facilities, equipment, and appearance of personnel	1. Should have up-to-date equipment 2. Physical facilities should be visually appealing 3. Employees should be well dressed and appear neat 4. Appearance of physical facilities should be in keeping with the type of services
Reliability: Perform the promised Service dependably and accurately	5. Should do things by the time they promise 6. When customers have problems, they should be sympathetic and reassuring 7. Should be dependable 8. Should provide their services at time they promise 9. Should keep accurate records
Responsiveness: Help customers and provide prompt service	10. Should be expected to tell customers when services will be performed 11. Realistic for customers to expect prompt service 12. Employees always have willing to help customers 13. They are not too busy to respond to requests promptly
Assurance: Courtesy knowledge, ability of employees to inspire trust and confidence	14. Customers should be able to trust employees 15. Customers should feel safe in their transactions with these stores' employees 16. The employees should be polite 17. Employees should get support to do their jobs well
Empathy: Caring, individualized attention the firm provides its customers	18. Company should be expected to give customers individual attention 19. Employees can be expected to give customers personal attention 20. Realistic to expect employees to know what the needs of their customers are 21. Realistic for them to have customers' best interests at heart 22. Should be expected to have operating hrs. convenient to all customers

Source: Compiled from Parasuraman et al., (1988)

2.4.5. Service Quality in Airline Industries

Aviation plays a significant role in the world today. It supports social and economic development in both emerging and established nations. Globalizations of economies, air travel deregulation and technology have allowed more connectivity between countries. According to Zeritu (2010) many service sector companies see quality as a cornerstone or driving force for improving competitiveness, customer satisfaction and profitability. The quality development is not only to reduce costs and increase productivity but also to better satisfy customers, and improve profitability. For the air transport industry, Gourdin and Kloppenborg (1991) saw that the increasing in level of competition airlines continuously seeking ways of differentiating and integrating their operations in a bid to cut on operational costs, offer timely response to their clients and interact with their stakeholders in real-time.

Service quality is influenced by expected service and perceived service. If services are received as expected, the service quality is satisfactory, but if the services received exceed their expectations, customers will be delighted, and will perceive service quality as excellent and vice versa (Parasuraman et al., 1985). So, improving service quality depends on the airlines' ability to consistently meet the needs as well as desires of passengers. Airlines can benefit as well as achieving competitive advantage by doing their best to create and maintain service quality, which can lead to customer satisfaction. This in turn will grant various benefits to the airline by, for instance: (1) building strong relationships between the airline and its passengers, (2) providing a good basis for re-purchase activities, (3) encouraging passenger loyalty, (4) creating recommendations by word-of-mouth which will promote the airline, (5) creating a good corporate reputation in passengers' minds, and, finally, (6) by prompting an increase in the airline's profits (Park et al., 2005). Thus, airlines must realize the strategic importance of quality: continuously upgrading quality is not costly in the long term; rather, it is an investment that will generate greater profits.

Ostrowskietal. (1993) measured service quality with time lines, food and beverage quality, and comfort of seat dimensions. Truitt and Haynes (1994) used the check in process, the convenience of transit, the processing of luggage, timeliness, seat cleanliness, food and beverage quality, and handling of customer complaints as the standards of service quality. Bowen and Headley (2000) indicated on-time arrival, mishandled baggage, being denied boarding, and airline safety. They also added passenger complaints on items such as flight, reservation, ticketing and boarding problems, fares, refunds, customer service, advertising, and frequent flyer programs.

2.4.6. Roles of ERP and CRM Integration in Quality Service Delivery

Today, ERP and CRM systems totally changed the old computer systems from each separate department, and replaced them with a single unified software program that can be divided into software modules. The move toward ERP and CRM in the service sector did not begin in intense until recent year. Many of the early service sector ERP and CRM projects resulted in negative stories and, in some cases, entire project failures. Such stories of cost and schedule overruns, payroll issues, and financial reporting issues likely contributed to a shift in market focus toward realizing measurable return on investment for ERP and CRM systems (Ruivoa et al., 2014). If CRM and ERP system integrated properly, it drastically improves productivity by reducing duplication of data entry tasks, empowering employees with the right information at the right time, streamlining business processes through automated workflow, and improving organizational task management.

2.4.6.1. Better access to critical information.

A CRM and ERP solution that is fully integrated gives employees the ability to access important information in real-time. Without it, employees are less efficient and customers will pay the price (Hsu and Chen, 2004). A fully integrated ERP and CRM solution empowers employees with access to the information they need exactly when they need it. With the touch of a button, they can retrieve inventory levels, cargos, customer financials, payments, pricing, etc.

2.4.6.2. Streamline Business Processes

ERP and CRM applications allow organizations to automate business steps and processes that were previously manual and significantly improving employee productivity (Malhotra and Temponi, 2010). Powerful workflow tools in the CRM enable organizations to automate and embed best practices for sales, service, and marketing, while workflow tools in the ERP do the same for back-office functions. Organizations can design and modify their business processes, define business rules, and automate their execution (Zhang et al., 2005). In the past, without an integrated solution, many business processes were manual and time-consuming. However, a key benefit of merging ERP and CRM is to enhanced productivity through streamlined processes & automated workflow.

2.4.6.3. Reduce Duplication of Data Entry Tasks

Without an integrated system that shares data across the enterprise, significant rekeying of information is necessary into both the CRM and ERP systems for a number of business processes (Benkenstein and Stuhldreier, 2004). The integrated system not only does reduce duplication of data entry tasks, it also eliminates errors, conflicting data, and administrative costs (Hsu and Chen, 2004). In addition, entering data once means that the most accurate and up-to-date customer information is available to front-office and back-office employees at the same time which in turn improves productivity by reducing the need to redo work due to erroneous information.

2.4.6.4. Empower Employees

In the past, without a single point of customer information, employees were unable to answer all questions about a customer from one system (Bose, 2012). An integrated solution delivers a complete view of customers to all employees, allowing them to answer questions promptly and accurately. Managers and executives have the ability to easily report on information about prospects for use in forecasting and perform business reporting. In addition, because users can access back-office information from the front-office application, they don't need to learn a second application so less time is spent training employees (Boulding et al., 2005).

2.5. ERP and CRM Software Vendor Profiles

There is more than 150 ERP and CRM software being offered by more than 100 vendors in world. A recent survey indicated that overall costs of system implementation ranged from US$1000 to US$ 12 million.

2.5.1. SAP

SAP is a leading global provider of business software. SAP ERP and CRM provides businesses with a fully integrated solution with a wide range of core organization functionalities (http//www.sap.com). As the largest enterprise application vendor, SAP offers a mature ERP and CRM solution that has substantial adoption among its global customer base. SAP offers a number of support plans including Enterprise Support, Standard Support, Max Attention and Active Embedded. All of these support plans include updates to systems, incident support, remote guidance in special situations and knowledge resources. SAP also offers training for its product including live instruction, eLearning, virtual live class, online knowledge products & the SAP mobile training app.

2.5.2. Oracle

Oracle Corporation is a U.S based computer technology provider. Oracle offer a number of business software solutions such as HCM, APA, FCO, SCM, MRP, and CRM (http//www.oracle.com). The software solutions are offered with number of deployment options including cloud, hosted and installed systems. Support is offered for Oracle products through premier support which includes 24/5 technical support, support resources and product updates. Training is available for Oracle products through the Oracle University which offers classroom training, live virtual class, training on-demand and self-study courses and 99% of users of this training would recommend the training to others (http//www.oracle.com).

2.5.3. EPICOR

Epicor Software is a global leader delivering business software solutions to the manufacturing, distribution, retail, hospitality and services industries With 20,000 customers in over 150 countries, based in Dublin, California which has over 40 years of experience serving small, mid-sized and large organizations. Epicor provides integrated ERP, CRM, SCM and enterprise retail software solutions that enable companies to drive increased efficiency and improve profitability (http//www.epicor.com).

2.5.4. PeopleSoft

PeopleSoft Enterprise is a software that enables organizations to reduce costs and increase productivity by pure internet architecture, directly connecting customers, suppliers, partners, and employees to business processes on-line, in real time. PeopleSoft's integrated applications include CRM, Supply Chain Management, Human Capital Management, & Financial Management (http//www. peoplesoft.com).

2.5.5. Sage

Sage North America is part of The Sage Group plc, a leading global supplier of business management software and services with over 6 million customers across 24 countries. The company's Sage ERP product, originally Sage Abra, is a that solutions support accounting, operations, customer relationship management, human resources, time tracking, merchant services, and the specialized needs of the construction, distribution, manufacturing, nonprofit, and real estate industries. Sage provides customer support for their software through a variety of support plans. These incorporate online support and live chat support. http://www.facebook.com/Sage & Twitter at: http://twitter.com/#!/sage.

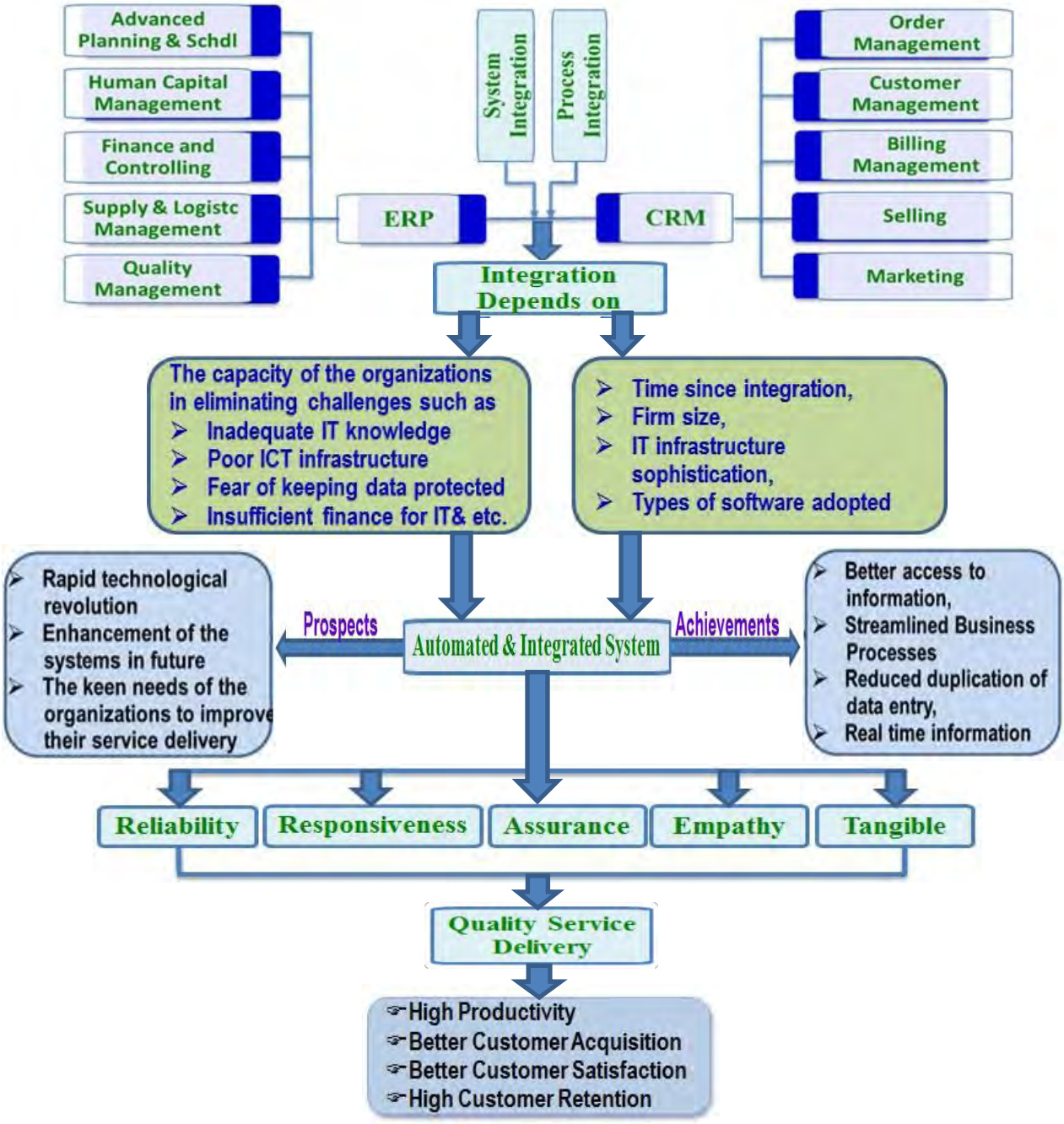
2.5.6. Workday

Workday is a provider of HR and finance cloud ERP. Founded in 2005, Workday delivers different ERP modules. This ERP solution is targeted towards businesses ranging from midsized companies to Fortune enterprises (http//www.workday.com).

2.6. Conceptual Framework

Conceptual framework (Figure 2.10) portrays the contribution of ERP and CRM systems integration to quality service delivery. Successfully integrated ERP and CRM systems lead to facilitated decision-making, better customer acquisition, better customer satisfaction, high customer retention, and high productivity and so on.

Figure 2.12: Schematic diagram for the conceptual framework



Source: Developed by the researcher from different sources, 2016

Chapter Three

Research Methodology

3.1. Introduction

This chapter presents the research methodology. It briefly outline research design, study population, sample size and sampling technique, sources of data, methods and procedures of data collection, reliability and validity measures, methods of data analysis and ethical considerations.

3.2. Research Design

A research design is the arrangement of condition for collection and analysis of data in the manner that combine relevance to the research purpose with economy in procedure (Saunders et al, 2009). The study adopted descriptive research method approach in collecting data from the respondents. The descriptive survey method was preferred because it ensures complete description of the situation, making sure that there was minimum bias in the collection of data and finding out the what, where and how of a phenomenon (Kothari, 2008). In addition, the method used to describe the nature of the situation as it exists at the time of the study and help to explore the causes of particular phenomena (Collis and Hussey, 2009). Based on the purpose of the research, the researcher combined both quantitative and qualitative research methods, which is called triangulation. Triangulation approach used to cross-verify the collected data and information from two or more sources (Kothari, 2008).

3.3. Study Population

According to Saunders et al, (2009), a population is an entire group of individuals, events or objects with some common observable characteristics. In this research, the Ethiopian Airline executives, middle line managers and customers were population of the study. These were considered relevant because they are familiar with the information needed on the topic under discussion.

3.4. Sample Size and Sampling Technique

According to Kothari (2004), a sample is part of the target population that has been procedurally selected to represent the study. Although there are time & other anticipated limitations to visit all service sectors organization, I was attempted to visit only Ethiopian Airlines in order to incorporate the important personnel who can provide me pertinent information. The total sample of respondents were 165. Out of this, 115 were employee of the company and 50 were customers of the company who have flown on Ethiopian airlines on any route. The customers were selected at Bole international airport when they were waiting for their flight and transit passengers. To select the customers, non-probability convenience sampling technique was used since the population is too large and it is impossible to include every individual. Employee also selected by using non-probability purposive sampling technique since they are familiar with the information needed on the topic under discussion.

Table 3.1 The respondents of the study in Ethiopian Airlines.

Selected Service Sector Company	Respondents		Sample Size	Feedback Received	Response Rate	Sampling Techniques
Ethiopian Airlines	Employee of the company	Executives	**5**	**5**	**100%**	Purposive sampling
		Middle line Managers	**35**	**28**	**80%**	Purposive sampling
		Operational Officers	**75**	**51**	**68%**	Purposive sampling
		Total	**115**	**84**	**73%**	
	Customers of the company		**50**	**45**	**90%**	Convenience sampling
Total	5+35+75+50 = **165**	Feedback **129**		Overall Response Rate 129/165= **78.1**		

Source: Primary data, August 2016

3.5. Sources of Data

The choice of particular method of collecting data depends upon the purpose of collecting data, the information being collected, and the resources available for the researcher and the skills of the researcher (Saunders et al, 2009). Accordingly, the data for this study was collected from both primary and secondary sources.

3.5.1. Primary Data Sources

According to Kothari (2004), Primary data are those data collected afresh and for the first time, and thus happen to be original in character. Primary data are more accurate and reliable compared to secondary data (Collis and Hussey, 2009). The sources of primary data for this study are company's managers, operational officers and customers.

3.5.2. Secondary Data Sources

The secondary sources of data come from published articles such as business journals, books, theses, company reports and publications, websites and related studies on ERP and CRM system implementation and integration. Acquiring secondary data are more convenient to use because they are already condensed and organised. Moreover, analysis and interpretation are done more easily (Saunders et al, 2009).

3.6. Data Collection Instruments

This study used both primary and secondary data. Primary data was gathered by using semi-structured face-to-face interviews and self-administered closed and open ended questionnaires.

3.6.1. Primary Data Collection Instruments

3.6.1.1. Semi-structured Interview

Qualitative empirical data collected via semi-structured face-to-face interviews which are used because of their flexibility and providing rich insights for exploring, identifying, and

understanding viewpoints and attitudes (Saunders et al., 2009). Moreover, it allows greater control over the interview situation (e.g. sequencing of questions) while providing opportunities for making clarifications and collecting supplementary information (Kothari, 2008). Based on the scope of the study, the managers of each department were selected for the interview to get more and significant evidence since they have detail information regarding the ERP and CRM system adoption, implementation and integration and their impact on quality service delivery process in their organization.

3.6.1.2. Questionnaire

Questionnaire provided an efficient way of collecting responses from a large sample prior to quantitative analysis (Kothari, 2008). To obtain the study data, 165 questionnaires were distributed to the potential respondents in the Ethiopian Airlines. The respondents were managers, operational workers and customers. The questionnaire consists scale questions that help to collect opinions. Five point Likert-style rating scale (1: strongly disagree, 2: disagree, 3: neutral, 4: agree, 5: strongly agree) was employed during designing the questionnaire.

3.6.1.2.1. Questionnaire Structure

The questionnaires were divided into two part each with two sections. The first part of the questionnaires were distributed to employees of Ethiopian Airlines and the second part was to customers of the company. The first section of each part contain statements aimed at collecting demographic data. The second section of the first part outline statements aimed at measuring the achievements, challenges and prospect related to ERP and CRM integration. The second section of second part outline statements aimed at measuring the service delivery quality using SERVQUAL's service quality dimensions with 22items. The SERVQUAL scale has modified to fit the specific context of aviation industry by generating additional quality related measures or items other than the ones already included in the SERVQUAL instrument to develop a more appropriate scale for

measuring airline service quality. Customers were asked to indicate their level of agreement with a set of statement using five point likert-style rating scale.

3.7. Procedures of Data Collection

Within the study, first, interview was done with managers using semi-structured questionnaire to clarify the research arena. Their experiences, knowledge and personal views on ERP and CRM integration were documented. After identifying the research arena, questionnaire was designed and developed to address research questions in order to collect primary data for further analysis. Then the pilot survey was done to test the reliability and validity of the questions. Finally, the questionnaires were redesigned and distributed to collect the necessary information for analysis to indicate the strength and weakness of ERP and CRM system integration.

3.8. Methods of Data Analysis

Data analysis is a systematic examination and evaluation of documents used in the study. It assisted to understand and obtain perspective on the findings related to the research topic under study and also help to improve interpretation of research results (Saunders et al., 2009). The data collected through the questionnaires and interview were grouped according to themes and then converted to statistical packages for analysis and interpretation. The goals are to integrate themes and concepts into a theory that offers an accurate, detailed and subtle interpretation of the research arena (Kothari, 2008). SPSS (Statistical Package for Social Sciences) version 19 was used to analyze the data set. Tabulation method, frequency distribution, chart, description of facts based on some statistical analysis were performed to interpret the data. Finally recommendations drawn based on the result for effective integration and maintenance of ERP and CRM.

3.9. Ethical Considerations

It is compulsory to follow ethical measures for the research as guidelines. The researcher tried to establish good relationships with all the respondents because the selection of potential and appropriate people play important role for the reliability and validity of the data that was generated. The informants that contributed for this research first gave their informed consent to participate in the study. In addition, the questions was made simple and clear to avoid any misunderstanding and avoid ambiguity, as well as sensitivity to the pieces of information the informants would provide to the researcher.

3.10. Reliability and Validity

For the purpose of measuring internal consistency of the scales, Cranbach's alpha coefficient of correlation was used. This coefficient is a model of internal consistency, based on the average inter-item correlation, unlike other types of models. To know the confidence interval, the researcher specified the level for the confidence interval to be 95%. Therefore, those scaled items in the questionnaire were found to be reliable and valid because the Cranach's alpha coefficient correlation was calculated to be greater than .850 which is higher than 0.70 which suggest good internal consistency.

Table 3.2 Reliability and Validity (ERP-CRM)

Scale	Number of items	Cronbach's Alpha
ERP-HCM	8	.855
ERP-APS	7	.894
ERP-SLM	7	.861
ERP-FICO	6	.853
ERP-CRM	10	.877

Table 3.3 Reliability and Validity (Service Quality Dimensions)

Scale	Number of items	Cronbach's Alpha
Reliability	6	.891
Tangibility	6	.864
Assurance	6	.881
Responsiveness	6	.859
Empathy	6	.868

Chapter Four

Results and Discussions

4.1. Introduction

This chapter presents the results of the study and interpretation of the findings. The chapter comprised of two parts with three sections each. The first section of each part presents the background characteristic showing, gender, experience, level of education and age categories of respondents using cross tabulation. The second section presents statistics that explain the study variables under study using the item bar chart, tables and mean and standard deviation. The third section discus the results and overall responses.

4.2. Data Analysis Based on Employee Responses

4.2.1. Presentations of Respondent profile (Employees)

Table 4.1 Respondent profile (Employees)

Demographic Variables		Ethiopian Airlines	
		Q	Percentage (%)
Sex of respondents (Employees)	Male	55	65.5 %
	Female	29	34.5 %
	Total	**84**	**100.0%**
Age of respondents (Employees)	Below 25 years	20	23.8 %
	26 – 35 years	53	63.1 %
	36 – 45 years	8	9.5 %
	Above 45 years	3	3.6 %
	Total	**84**	**100.0%**
Academic level of respondents (Employees)	Grade 10 or 12 Complete	-	0%
	Diploma	-	0%
	BSc/BA degree	59	70.2 %
	MSc/MA degree	25	29.8 %
	Total	**84**	**100.0%**
Years of service of respondents (Employees)	1-5 years	22	26.2 %
	6-10 years	45	53.6 %
	11-15 years	11	13.1 %
	Above 15 years	6	7.1 %
	Total	**84**	**100.0%**

Source: Primary data, August 2016

Table 4.1 shows background characteristics of employee. These characteristics included gender, experience, age and level of education of respondents. The characteristics were presented based on the responses from the respondents. The executives, middle line managers and operational officers who use the systems participated to the research (n =115). The social demographic qualifications of the participants are as follows: 55 Male (65.5 %) and 29 Female (34.5 %) participated to the research. This implies there might be discrimination on sex or may be because of other reason. The educational backgrounds of the participants are; 59 (70.2 %) have undergraduate degree and 25 people (29.8%) have master degree. This indicates that the respondents who comprised of the study were qualified to provide the required responses for the study. The age categories of participants shows that; 20 people (23.8 %) are under 25; 53 people (63.1%) are between 25-35; 8 people (9.5 %) are between 36–45 and 3 people (3.6 %) are more than the age of 45. Work experience of respondents are; 22 people (26.2%) have 1–5 year work experience; 45 people (53.6%) have 6–10 year work experience; 11 people (13.1%) have 11–15 year experience and 6 people (7.1 %) have seniority more than 15 years. From the results, majority of the respondents had spent 6-10 years at their respective organizations.

4.2.2. Employees' Responses on the Achievements of ERP & CRM Implementation

4.2.2.1. Employees' Responses on ERP-Human Capital Management (ERP-HCM)

This section presents the employee responses on the achievements of ERP-Human Capital Management (ERP-HCM) module implementation. Items frequency tabulation was used to present the results of the respondents as presented below in table 4.2.

Table 4.2: Employees' Responses on ERP-Human Capital Management (ERP-HCM)

	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		NO	NO	NO	NO	NO
		%	%	%	%	%
1	The system recruit and leverages employee's talent in the right place and at the right time	18	25	23	15	3
		(21.4%)	(29.8%)	(27.3%)	(17.8%)	(3.6%)
2	The system make easy for those employees who are better performers able to receive higher pay increase than poor performers	11	42	21	10	-
		(13.1%)	(50%)	(25%)	(11.9%)	-
3	HCM system reduced the time, error and costs of payroll processing and reporting & improved the quality of work performed	18	35	17	14	-
		(21.4%)	(41.7%)	(20.2%)	(16.7%)	-
4	The system analyze & establish clear objectives & detailed training plan relevant to employee need.	5	15	43	13	8
		(5.9%)	(17.8%)	(51.2%)	(15.5%)	(9.5%)
5	The system performs comprehensive tracking of HR functions & HR objectives are integrated to the overall missions and vision of the company	16	25	39	4	-
		(19%)	(29.7%)	(46.4%)	(4.8%)	-
6	The systems supports customers and employee files to be completed accurately & held currently	20	33	15	14	-
		(23.8%)	(39.3%)	(17.8%)	(16.7%)	-
7	e-Recruitment system of the company linked to the HR objectives of the organizations.	19	38	18	9	-
		(22.6%)	(45.2%)	(21.4%)	(10.7%)	-
8	The HCM system has improved their ability to disseminate information & increased the amount of useful information	21	29	17	17	
		(25%)	(34.5%)	(20.2%)	(20.2%)	-

Source: Primary data, August 2016

As table 4.2 shows, 51.2% of the participants replied favorable answers with statement that the system recruit and leverages employee's talent in the right place and at the right time, while 23.8% were neutral. Sixty three percent of respondents believed that their HCM system reduced the time, error and costs of payroll processing and reporting and improved the quality of work performed. In additions, majority of responses indicates that e-recruitment of the organizations linked to the HR objectives of the organizations. Almost more than half of participants responded neutral suggestion with statement that their system analyze and establish clear objectives and detailed training plan relevant to the employee need. These results indicate that the company need to continue to follow the criteria that the HR policy states and this will in turn create trust and confidence for the employees on the process.

4.2.2.2. Employees' Responses on ERP-Supply & Logistics Management (ERP-SLM)

This section presents the employee responses on ERP-Supply and Logistics Management (ERP-SLM) module implementation. The items frequency tabulation was used to present the results of the respondents as presented below in table 4.3.

Table 4.3: Employees' Responses on ERP-Supply & Logistics Management (ERP-SLM)

	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		NO	NO	NO	NO	NO
		%	%	%	%	%
1	The ERP-SLM system increased the company sales volume (i.e. ticket)	23	35	10	16	-
		(27.3%)	(41.7%)	(11.9%)	(19%)	-
2	The system minimized delays in the delivery of goods and services.	24	38	22	-	-
		(28.6%)	(45.2%)	(26.2%)	-	-
3	The system resulted with reduction in inventory and in material, labor and overhead costs	18	25	30	11	-
		(21.4%)	(29.8%)	(35.7%)	(13.1%)	-
4	The activities of supply chain no longer require duplicate files and redundant data entry.	22	36	18	6	2
		(26.2%)	(42.8%)	(21.4%)	(7.1%)	(2.4%)
5	The system improve the interaction between different business units	16	39	19	10	-
		(19%)	(46.4%)	(22.6%)	(11.9%)	-
6	The SLM system enables to plan and streamline the company network of logistics and resources that come together from supply chain	22	26	21	14	1
		(26.2%)	(30.9%)	(25%)	(16.7%)	(1.2%)
7	The system analyze & plan supply and demand process appropriately	25	29	21	9	-
		(29.7%)	(34.5%)	(25%)	(10.7%)	-

Source: primary data, as August 2016

As table 4.3 shows, majority of employee were favorable with statement that their ERP-SLM system increased sales volume (i.e. ticket) of the company, while 19% disagreed. In addition 51.2% of them were agreed that the system resulted with reduction in inventory and in material, labor and overhead costs and 35.7% felt neutral. Moreover, regarding duplication of files and redundant data entry, majority of employee were replied favorably that the activities of supply chain system of the company no longer requires duplication of files and redundant data entry. Finally, majority of the employee also believed that their system improve the interaction between different business units, while 11.9% of them were disagreed.

4.2.2.3. Employees' Responses on ERP-Advanced Planning & Scheduling (ERP-APS

This part presents the employees' responses on ERP-Advanced Planning and Scheduling (ERP-APS). Table 4.4 below presents tabular frequency of the results.

Table 4.4: Employees' Responses on ERP-Advanced Planning & Scheduling (ERP-APS

	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		NO	NO	NO	NO	NO
		%	%	%	%	%
1	The APS system enhanced forecasting, planning and scheduling process	19	35	22	7	1
		(22.6%)	(41.7%)	(26.2%)	(8.3%)	(1.2%)
2	The APS system make easy to capture the creative insight of employees by soliciting their ideas for better planning and scheduling	9	26	19	26	4
		(10.7%)	(30.9%)	(22.6%)	(30.9%)	(4.8%)
3	APS act as a catalyst for improving the company performance & supporting the tactical planning processes	21	37	23	3	-
		(25%)	(44%)	(27.3%)	(3.6%)	-
4	The APS system make the best use of people, process, technology and information in order to increase service levels & reduce operational cost	15	28	30	9	2
		(17.8%)	(33.3%)	(35.7%)	(10.7%)	(2.4%)
5	The process of planning & scheduling has in most cases been manual and quite unstructured before the implementation of APS system	25	41	18	-	-
		(29.8%)	(48.9%)	(21.4%)	-	-
6	Information management policies and procedures for quality service delivery process is underway and showing good progress.	21	25	21	12	5
		(25%)	(29.8%)	(25%)	(14.3%)	(5.9%)
7	There are problems in the area of information flow management	11	15	26	18	14
		(13.1%)	(17.8%)	(30.9%)	(21.4%)	(16.7%)

Source: primary data, as July 2016

According to the results in table 4.4 above, 41.5% of respondents were answered favorable response with statement that their APS system enhanced forecasting, planning and scheduling process, while 10% of them were disagreed. In addition, majority of respondents were agreed that their process of planning & scheduling has in most cases been manual and quite unstructured before the implementation of APS system. The result also shows, only 35.7% of employee respond that the APS system make easy to capture creative insight of employees by soliciting their ideas for better planning and scheduling.

4.2.2.4. Employees' Responses on ERP-Finance and Control module (ERP-FICO)

This section presents the employee responses on ERP-Finance and Control module (ERP-FICO). The items frequency tabulation was used to present the results of the respondents as presented below in table 4.5

Table 4.5: Employees' Responses on ERP-Finance and Control module (ERP-FICO)

	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		NO	NO	NO	NO	NO
		%	%	%	%	%
1	The system provides comprehensive and consolidated financial reports and integrates the different sources of financial data	18 (21.4%)	28 (33.3%)	25 (29.8%)	11 (13.1%)	2 (2.4%)
2	The FICO system increase service levels and reduce operational cost	14 (16.7%)	31 (36.9%)	19 (22.6%)	18 (21.4%)	2 (2.4%)
3	The implemented financial module reduced the financial cycle closing time	20 (23.8%)	27 (33.3%)	30 (35.7%)	6 (7.1%)	- -
4	The activities of financial accounting no longer require duplicate files and redundant data entry.	18 (21.4%)	38 (45.2%)	15 (17.8%)	9 (10.7%)	4 (4.7%)
5	As a result of FICO system implementation, the financial reports can be easily customized to meets the needs of various decision maker.	16 (19%)	35 (41.7%)	20 (23.8%)	11 (13.1%)	2 (2.4%)
6	The system helps employee to manage data involved in any financial & business transactions in a unified system	22 (26.2%)	25 (29.8%)	24 (28.6%)	13 (15.5%)	- -

Source: primary data, as August 2016

As table 4.5 shows, majority of respondents believed that the implemented financial module reduced the financial cycle closing time While, 35.7% of participants were replied neutral responses. Fifty two percent of respondent answer favorably with statement that their system increase service levels and reduce operational cost, while, 23.8% were disagreed. Majority of respondents believed that as a result of FICO system implementation, the financial reports can be easily customized to meets the needs of various decision makers, while 23.8% of participants were replied neutral responses.

4.2.2.5. Employees' Responses on Customer Relationship Management Systems

This section presents the employees response on customer relationship management (CRM) module. The item frequency distribution tabulation was used to present the results as presented below in table 4.6.

Table 4.6: Employees' Responses on Customer Relationship Management (CRM)

	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
		NO	NO	NO	NO	NO
		%	%	%	%	%
1.	The CRM system improves customer relationship & increased customer loyalty & retention.	18	31	19	12	4
		(21.4%)	(36.9%)	(29.2%)	(14.3%)	(4.8%)
2.	There are sufficient on line support features for customers regarding the company service	11	20	15	29	9
		(13.1%)	(23.8%)	(17.8%)	(34.5%)	(10.7%)
3.	The system improve customer knowledge about the service the company offers	13	18	34	18	1
		(15.5%)	(21.4%)	(41.5%)	(21.4%)	(1.2%)
4.	A central database is accessible by all employees to view and update customer data	7	22	28	21	6
		(8.3%)	(26.2%)	(33.3%)	(25%)	(7.1%)
5.	The systems made customer files to be easily accessed & lower time spent the on communicating information within company.	19	28	23	8	6
		(22.6%)	(33.3%)	(27.3%)	(9.5%)	(7.1%)
6.	The system makes the best use of people, process, and information in order to increase service levels and reduce operational cost.	11	29	30	14	-
		(13.8%)	(34.5%)	(35.7%)	(16.7%)	-
7.	The CRM system enhanced ability to target profitable customers	19	25	28	8	4
		(22.6%)	(29.8%)	(33.3%)	(9.5%)	(4.8%)
8.	Customer complaints reduced	11	31	23	12	7
		(16.3%)	(36.9%)	(27.3%)	(14.3%)	(8.3%)
9.	Customers easily find all relevant information about the company (e.g., ticket prices, options, shipping information) on company website	17	21	29	17	-
		(20.2%)	(25%)	(34.5%)	(20.2%)	-
10	The system make easy to know and recognize customers, understand them and care about their needs	21	25	25	10	3
		(25%)	(29.8%)	(29.8%)	(9.5%)	(3.6%)

Source: primary data, as August 2016

As table 4.6 shows, majority of the employee respond favorably with statement that their CRM system improve customer relationship & increased customer loyalty & retention, while 29.2% of them gave neutral suggestion. For statement that the systems made customer files to be easily accessed and lower time spent the on communicating information within company, majority of them were agreed, while 27.3% felt neutral. Moreover, 34.5% of respondents were agreed with statement that there are sufficient on line support features for customers regarding the company service and 25.5% of them were disagreed. Just, 45% of participants respond favorably with statement that customers easily find all relevant information about the company (e.g., ticket prices, options, and shipping information) on company website, while 20% of them were agreed.

4.2.3. Employees' Responses on Challenges of Integrating ERP and CRM

This section presents responses on challenges of integrating ERP and CRM systems. It emphasized on the challenges pinpointed during implementing and integrating ERP and CRM system as perceived by employees of the Ethiopian Airlines. Table 4.7 shows the tabular analysis of the respondents.

Table 4.7. Responses on Challenges of Integrating ERP and CRM Systems

	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean	Std. dev.
		NO	NO	NO	NO	NO		
		%	%	%	%	%		
1.	Insufficient financial support for effective ERP and CRM system implementation & integration	4	31	19	28	2	3.56	.308
		(4.8%)	(36.8%)	(22.6%)	(33.3%)	(2.4%)		
2.	Poor ICT infrastructure (Network failure due to poorly developed telecommunication setup)	7	21	21	30	5	3.41	.362
		(8.3%)	(25%)	(25%)	(35.7%)	(5.9%)		
3.	Inadequate knowledge (lack of training) in implementing and integrating the system	28	30	19	7	-	4.06	.242
		(33.3%)	(35.7%)	(22.6%)	(8.3%)	-		
4.	Ineffective communication system	-	14	28	30	12	3.34	.596
		-	(16.7%)	(33.3%)	(35.7%)	(14.3%)		
5.	Lack of commitment from top managers are barriers for effective ERP and CRM integration	6	15	25	33	5	3.38	486
		(7.1%)	(17.8%)	(29.8%)	(39.3%)	(5.9%)		
6.	A lot of paper work that is difficult to computerize	19	28	26	11	-	3.84	.425
		(22.6%)	(33.3%)	(30.9%)	(13.1%)	-		
7.	Resistance from employees because they prefer traditional methods	-	13	33	35	3	3.48	.351
		-	(15.5%)	(39.3%)	(41.7%)	(3.8%)		
8.	Poor employee attitudes (Lack of commitment)	11	15	20	31	7	3.35	.139
		(13.1%)	(17.8%)	(23.8%)	(36.8%)	(8.3%)		
9.	Keeping data protected all time from being accessed by unauthorized persons makes the systems ineffective	15	19	26	24	-	3.43	.610
		(17.8%)	(22.6%)	(30.9%)	(28.6%)	-		
10	Inefficient internal processes	8	17	15	36	8	3.14	.417
		(9.5%)	(20.2%)	(17.8%)	(42.9%)	(9.5%)		

Source: primary data, as August 2016

As the table 4.7 shows, several challenges were hindering ERP-CRM system integration among of which included; insufficient financial support (Mean=3.56), poor ICT infrastructure (Mean=3.41), Inadequate knowledge (lack of training) (Mean=4.06), ineffective communication system (Mean=3.34), lack of commitment and involvement from top managers and all employees (Mean=3.38), lot of paper work that is difficult to computerize (Mean=3.84). Likewise, resistance from employees because of they prefer traditional methods (Mean=3.48), fear of keeping data protected all time from being accessed by unauthorized persons (Mean=3.43), and inefficient internal processes (Mean=3.14) undermined the achievement of the full potential of ERP-CRM system integration. This implies that the existence of gaps in the ERP-CRM system hindered the quality delivery of services.

4.3. Data Analysis Based on Customers Response

4.3.1. Presentations of Respondent Profile (Customers)

Table 4.8. Respondents profile (Customers)

Demographic Variables		Ethiopian Airlines	
		Q	Percentage (%)
Sex of respondents (Employee)	Male	34	75.6 %
	Female	11	24.4 %
	Total	**45**	**100.0%**
Age of respondents (Employee)	Below 25 years	6	3.3%
	26 – 35 years	25	55.6 %
	36 – 45 years	8	17.8 %
	Above 45 years	6	13.3 %
	Total	**45**	**100.0%**
Academic level of respondents	Grade 10 (new curriculum) or 12 (old curriculum) Complete	3	6.7 %
	Diploma	3	6.7 %
	BSc/BA degree	35	77.8 %
	MSc/MA degree	4	8.9 %
	Total	**45**	**100.0%**
Occupations	Student	4	8.9 %
	Government official	8	17.8 %
	Private Employee	11	24.4 %
	Self-employee	22	48.9 %
	Total	**45**	**100.0%**

Source: primary data, as August 2016

Table 4.8 shows background characteristics of customers. These characteristics included gender, age and level of education, and occupations of respondents. The characteristics were presented based on the responses from the respondents. The social demographic qualifications of participants are as follows: 34 Male (75.6 %) and 11 Female (24.4 %) participated to the research. The educational backgrounds of the participants are; 3 people (6.7 %) have diploma, 35 (77.7 %) have undergraduate degree & 7 people (15.6 %) have master degree. This indicates that the respondents were qualified to provide the required responses for the study. The age categories of participants shows that; 6 people (13.3 %)

are under 25; 25 people (55.5%) are between 25-35; 8 people (17.8 %) are between 36–45 and 6 people (13.3 %) are more than the age of 45. Occupational statuses of respondents are; 4 people (8.9%) were student; 11 people (24.4%) were private employee; 8 people (17.8%) were government employee and 22 people (48.9%) were self-employed. From the results, majority of the respondents were self-employed.

4.3.2. Customers' Responses on the Service Quality Dimensions

4.3.2.1. Customers' Responses on Reliability Dimension of Service Quality

This section presents customers' responses on reliability dimension of service quality. Item frequency tabulation was used to present the results as presented in table 4.9.

Table 4.9: Customers' Responses on Reliability Dimension of Service Quality

No	Items		N	Mean	Std. Deviation
1.	**R1**	The company does things by the time they promise	**45**	**3.38**	**.437**
2.	**R2**	Employee are dependable in handling customers' service problems	**45**	**3.15**	**.423**
3.	**R3**	The company has systems that maintain error-free records	**45**	**3.64**	**.615**
4.	**R4**	The company perform services right the first time	**45**	**3.35**	**.493**
5.	**R5**	The company track customers need efficiently.	**45**	**3.41**	**.517**
6.	**R6**	There are respectable transfer service and efficiency at departure airport	**45**	**3.77**	**.558**

Source: Primary data, August 2016

As table 4.9 shows, the lowest mean is 3.15 on R2 (Employee are dependable in handling customers' service problems) & all the means lie between 3 and 4. The findings also indicate that the highest mean is on R6 (There are respectable transfer service & efficiency at departure airport) at 3.77. This indicates the Ethiopian Airlines is good at reliability dimensions of service quality which means the company perform the promised Service dependably and accurately.

4.3.2.2. Customers' Responses on Tangibility Dimension of Service Quality

This subsection present customer's response on tangibility dimension of service quality. Table 4.10 below presents tabular frequency of the results.

Table 4.10: Customers' Responses on Tangibility Dimension of Service Quality

No	Items		N	Mean	Std. Deviation
1.	T1	The company uses physical representations of service, such as a plastic credit card to provide Quality Service	45	3.81	.571
2.	T2	The company have up-to-date equipment (Modern equipment)	45	3.64	.485
3.	T3	The company keep the appearance of its physical facilities in right way to provide quality services	45	4.08	.685
4.	T4	Employees have a neat, professional appearance	45	4.16	.598
5.	T5	The company has visually appealing materials associated with the service.	45	3.93	.554
6.	T6	The company offers varieties and choices of in-flight and ground service entertainment facilities	45	4.03	.492

Source: primary data, as July 2016

According to the results in table 4.10 above, the lowest mean is 3.64 on T2 (The Company have up-to-date equipment (Modern equipment)) & all the means lie between 3 and 5. The findings also indicate that the highest mean is on T4 (Employees have a neat, professional appearance) at 4.16. This indicates the Ethiopian Airlines is performing at adequate level in possessing good looking equipment, visually appealing materials and neat appearing employees. The result indicates that customers have high levels of expectation on every services they confronted and the Ethiopian airlines performed a good job and should maintain the service quality.

4.3.2.3. Customers' Responses on Empathy Dimension of Service Quality

This section presents customers' responses on empathy dimension of service quality. Item frequency tabulation was used to present the results as presented in table 4.11.

Table 4.11: Customers' Responses on Empathy Dimension of Service Quality

No	Items		N	Mean	Std. Deviation
1.	**E1**	The company offer greater range of service with more flexibility to customers	**45**	**3.08**	**.518**
2.	**E2**	The company provide direct access and real time data to customers through company website	**45**	**2.49**	**.498**
3.	**E3**	Employees understand the needs of their customers exactly	**45**	**3.11**	**.625**
4.	**E4**	The company gives customers individual attention (ex. For pregnant, elders, disables…)	**45**	**2.54**	**.525**
5.	**E5**	The company have convenient flight schedule	**45**	**3.05**	**.648**
6.	**E6**	The company have other travel related partners e.g. car rental, hotels, travel insurance	**45**	**3.18**	**.551**

Source: primary data, as August 2016

As table 4.11 shows, the lowest mean is 2.49 on E2 (The Company provide direct access and real time data to customers through company website) & all the means lie between 2 and 4. The findings also indicate that the highest mean is on E6 (The company have other travel related partners e.g. car rental, hotels, travel insurance) at 3.18. These are the area where the company needs to work in order to improve customer perception of service quality since relatively both the value at E2 (The company provide direct access and real time data to customers through company website) and E4 (The company gives customers individual attention (ex. For pregnant, elders, disables…) were below 3. To improve empathy in EAL, managers should study their target market precisely; what they really want and how they can be satisfied and provide direct access and real time data to customers through company website.

4.3.2.4. Customers' Responses on Assurance Dimension of Service Quality

This section presents customers' responses on assurance dimension of service quality. Item frequency tabulation was used to present the results as presented in table 4.12.

Table 4.12: Customers' Responses on Assurance Dimension of Service Quality

No	Items		N	Mean	Std. Dev.
1.	A1	Company is able to initiatively take care of customers' needs	45	3.54	.715
2.	A2	There are no probability of flight breakdowns	45	3.18	.581
3.	A3	Customers feel safe in the transaction with the company employees	45	3.95	.685
4.	A4	The employees have knowledge and courtesy to convey trust and confidence in the service provision	45	3.89	.738
5.	A5	Employees instill confidence in customers	45	4.08	.557
6.	A6	There are effective safety performance in the airline	45	3.98	.641

Source: primary data, as August 2016

The analysis in table 4.12 above indicates that the lowest mean is 3.18 on A2 (There are no probability of flight breakdowns) & all the means lie between 3 and 5. The findings also indicate that the highest mean is on A5 (Employees instill confidence in customers) at 4.08. As the result shows, the customer perceived that the company is performing better in having knowledgeable and courteous employees and providing secure and trustworthy service. On average, the respondent's opinions were above average regarding the service offered by Ethiopian Airlines on the assurance dimensions of service quality.

4.3.2.5. Customers' Responses on Responsiveness Dimension of Service Quality

This part presents the Customers' Responses on Responsiveness Dimension of Service Quality. Table 4.13 below presents tabular frequency of the results.

Table 4.13: Customers' Responses on Responsiveness Dimension of Service Quality

No	Items		N	Mean	Std. Dev.
1.	RP1	Employees are not too busy to respond to customers need.	45	3.04	.553
2.	RP2	There are sufficient on line support features for customers	45	2.41	.518
3.	RP3	Employees of the company have willingness or readiness to help customers & provide quality service	45	3.10	.685
4.	RP4	The company has system that eliminated bureaucracy by providing direct access and real time data	45	2.98	.535
5.	RP5	The company have well-designed complaint handling mechanisms & capable to respond to emergency situations	45	3.01	.711
6.	RP6	The company announces any delay of service ahead of time	45	3.18	.677

Source: primary data, as July 2016

According to the results in table 4.13 above, the lowest mean is 2.41 on RP2 (There are sufficient on line support features for customers) & all the means lie between 2 and 4. The findings also indicate that the highest mean is on RP6 (The Company announces any delay of service ahead of time) at 3.18. As per the response of the customers shows, Ethiopian Airlines are not good in delivering responsive service. This indicates that there are weaknesses in helping customers, responding to customer inquiries, delivering prompt service and providing sufficient on line support features for customers. These findings indicate that the customers still expect more in the quality of service given by the service provider company.

4.4. Discussion

4.4.1. Discussion Based on Employee Response

In this section, the results of the study in line with the objectives of the research are discussed. From the 115 distributed questionnaires, 84 were returned and used for the analysis. The overall response rate was 73 percent. A summary of sample characteristics were presented in table 4.1 - 4.7.

The first objective of the study was to find out the main benefits the Ethiopian Airlines achieved regarding quality service delivery as the result of ERP and CRM system integration. Table 4.2 -4.7 gives the tabular analysis of respondents. The analysis based on table 4.2 shows, majority of respondents were believed that the integrated system performs comprehensive reporting and tracking of HR functions efficiently and effectively and the HR objectives of the organization integrated to the overall missions and vision of the company. Almost more than half of participants were also responded satisfactory answer with statement that the integrated system recruit and leverages employee's talent in the right place and at the right time. In today's corporate world human resources has come to play a very critical role in a business. Whether it concerns the hiring and firing of employees or whether it concerns employee motivation, the human resources department of organization now enjoys a very central role in the organizations. The ERP- HCM system links all human resources data from the time professionals enter pre service training to when they leave the workforce. Continuous monitoring and evaluation is vital in determining what an ERP HCM system is accomplishing, what needs to be improved and whether results are being achieved.

Today, employing candidates through online system reaches a wider audience than posting advertising vacancies in print media. When organizations delivered a message to a larger number of people, there is a higher likelihood that some of the respondents will be ideal for a particular job. But, an effective sorting tool must be in place to determine which candidates are ideal, because manually sorting through the hundreds of applications will be time-consuming and expensive. Since the process is virtual system, questions are addressed quickly and the information flow from both sides are unimpeded.

Moreover, online recruitment brings employers close to the potential employees, and when an application is not suitable for the position applied for, organizations can retain the resume in their database for future openings that may be right for the applicant. As the result shows, the company online recruitment process was satisfactory. However, the organization should have to updates and revise their existing policies and procedures in advance to improve the efficiency and effectiveness of their recruitment process. According to De Lone and McLean, (2003), the other intended benefit of online system is to reduce time spent on administrative processes. But, the results shows the effects of the online system on time savings are mixed since only 63.1% of the respondents believed that their the company had realized some savings in the time spent on processing paperwork and on correcting errors. This indicates the traditional systems were not positively affected as there was little decrease in the amount of time spent on these activities and communicating information within the organization.

From the analysis of results, majority of respondents were agreed with the statement that the integrated systems make easy for those employees who are better performers able to receive higher pay increase than poor performers and 25% of them felt neutral. Moreover, majority of respondents agreed that their system has improved the quality of work performed and resulted with less error and cost reduction. When the adopted system is integrated properly, organizations can enjoy the ultimate benefit of an all-in-one system that can decrease errors, lower cycle times, reduces turnaround time, and support management decisions (Darrag *et al.* 2010). Advancing the system integration require participation of each employee in the process of improvement by capturing and soliciting their creative insight and ideas.

In addition, table 4.2 reveals, 43.1% of respondents were agreed that the organization' HCM system has improved their ability to disseminate information and increased the amount of useful information, while 20% of them disagreed. Moreover, 63% of participants respond favorably that their HCM system held files accurately and on time. When new systems are employed, employees expect more data and more accessibility than ever before. As employees are able to manage more data, they seek broader information to answer questions and make decisions (Ulrich, 2001). The result shows,

38.4% of respondents were agreed that their HCM has decreased the time spent on communicating information within the organization, while 21.5% were disagreed.

Table 4.3 shows the response of customers on the Advanced Planning and Scheduling (ERP-APS) system. As their response indicates, majority of respondents were replied favorable answer with statement that their APS system enhanced forecasting, planning and scheduling process, while 10% and 27% of them were disagreed and felt neutral respectively. In addition, majority of respondents were agreed that their process of planning & scheduling has in most cases been manual and quite unstructured before the implementation of APS system. Today planning is the core of most organizations, and has a direct impact on their operational costs, revenue, and customer service levels. Every day, many decisions are made about how to utilize scarce resources on a strategic, tactical, and operational level. But today's planning decisions are often sub-optimal. They may not be based on the right information and processes, or may be executed by non-professional planners who have to work with unsuitable IT system. As a result, too often planning is a case of trying to keep up with reality, instead of being a key process with a direct impact on the decision makers, as it should be. Capturing the creative insight of employees in the process of planning and scheduling also very important. But, the result shows, only 35.7% of employee respond that the APS system capture the creative insight of employees by soliciting their ideas for better planning and scheduling.

Different literature implies that the implementation of the APS system involve design or redesign of business and planning processes, creation of new working procedures, and definition of roles and responsibilities. Based on the results contained in table 4.3, the adopted APS system facilitate changes in the planning processes in general and hence work as a catalyst for these changes, which indicates that the company is experiencing more streamlined processes after APS implementations. The APS system also has far-reaching functionality for aggregating and disaggregating the forecasted demand in any dimensions incorporated in the system. On all decision levels there is a need to know the future demand and the purpose of the demand planning is to improve decisions affecting

the demand accuracy and calculations of stocks. This gives a visibility and overview of both the forecasts and the actual sales in a structured way, which is very useful for managers, however, the systems appears to have little effect on the performance of the company as expected. Also, the study points to the fact that the system improved the tactical, operational and strategic level planning.

In addition, as different literature shows (i.e. Shih-Chih Chen et al., 2012), the efficient use of the APS systems for strategic planning leads to enhanced professional standing in the organization. Employee need to improve their own standing in the organizations about using the systems as the findings of the study showed. The implications for this disclosure are that developing employee planning skills and familiarize them with technology that helps to schedule appropriately in order to remain competitive. This means that the EAL should need to develop and plan capacity development programs on the APS system for employee in line with specific strategic tasks since enhanced professional standing implies effective and efficient work force that leads to improved performance and higher profit margins.

As the result shows that the development of information management policies and procedures for quality service delivery process is underway and showing good progress. However, lack of consistency in information management procedures leads to inaccurate data feeding in the systems which in turn interrupt better decision making system. So, the policies and procedures for data entry and validation should be redeveloped and documented, and they should include an appropriate quality control framework. In addition, there are problems in the area of information flow management. Therefore, the organizations should have to emphasize to employee the role and significance of ERP and CRM integration in facilitating information flow through proper training in respect to the system on-the-job and off-the-job, seminars, role plays, manuals, discussions and presentations. Furthermore, online training and tests should be conducted for those employees who use the system to enhance their skills. Moreover, the company should have to give employee private access to their information since increasing employees' perception of control over their information enhance their transparency, sense of fairness and job satisfaction.

Today, regarding supply and logistics management, virtually all most all companies are facing a more dynamic environment with greater uncertainty of demand, more significant seasonality, higher competitive intensity, more third-party service, new service balance, globalization, channel integration, and so on. However, almost all existing supply chain systems are featured reactive rather than proactive; uncertain; lack of flexibility in systems; poorly defined management process; no real partnerships; and paper, phone, fax based relationship. In order to overcome all of these shortcomings, ERP-SLM systems are required to overcome the challenges. As the result in table 4.4 shows, previously, the Ethiopian Airlines supply chains system are not integrated and placed complaints over poor business relationships (late order shipments, slow down or crashes on transportation lines, logistical errors in distribution channels) and as well as loss in business. These all had negative impacts on organization and with the customers who are the main force of attraction for a supply chain. After implementation of ERP-SLM system, all the activities are coordinated and executed to ensure higher levels of on time delivery across the chain.

Table 4.5 indicates the response of customers on CRM system. The Ethiopian Airlines managers explicitly recognize the roles of the system in the long-run value of potential and current customers, and increased revenues and profits through targeted marketing activities directed toward developing, maintaining, and enhancing successful customer relationships. The company realizes the keys to competitive advantage and profitability lie in customer relationships and customer retention. However, with uncertainty and lack of clarity about how customer relationships work, most have not been able to take full advantage of this insight. In addition, companies face big challenges when trying to integrate CRM and ERP systems. Service companies frequently manage their customer relationships haphazardly and unprofitably (García-Sanchez and Pérez-Bernal, 2007). Many times, they may not effectively or adequately use their connections with their customers, due to misunderstandings of a CRM system's data.

As a result shows, significant numbers of respondent suggested that, the company needs to review their existing strategies to deal with customers segments based on their profitability to achieve customer satisfaction, loyalty, and value. An alignment of the organization behind CRM goals also required an enterprise-wide program of change management including change in the organizational fundamental processes. The measurement of CRM program effectiveness should be also carried out through the development of a set metrics that are supposed to measure the attainment of customer objectives to measure the contribution of each program in the enhancement of an organization's data capability, and to measure the potential for improving the future programs. In addition, the real-time responsiveness of the company coupled with enterprise-wide integration should enable the company powerful capability of concurrent processing, which would be impossible without ERP systems. To conclude, the company obtained tremendous efficiencies and throughputs because of the integrated ERP and CRM system ability to administer in parallel many processes that are related but independent of each other. In non-ERP enterprises, such closely related processes are typically done sequentially because they are usually handled by the same set of personnel, who may obviously be constrained to address them only in a sequence.

The second objective of research was to locate problems, gaps and failings in the ERP and CRM system implementation and integration that prevent the achievements of its predetermined objectives and endeavors. Table 4.7 shows the tabular analysis of respondents. The analysis shows that the perception of the challenges of adopting, implementing and integrating the systems was investigated by asking respondents to rate each of the potential challenges shown in Table 4.7. Table shows the mean ratings and the ranking of the potential challenges to the implementation and integration of the systems in their organization. As can be seen from Table 4.7, the potential challenge expressed as "inadequate knowledge" had the highest mean score (4.16). The potential challenge "inefficient internal processes" had the lowest mean score (3.14).

As the table 4.7 shows, several problems stalled the predetermined objectives the ERP and CRM system implementation and integration. One of the potential challenges

mentioned by the respondents was the need for more training and development on the system. They believed that additional and better training would lead to better results. Organizations that do not invest in development & training of their employee will suffer financial consequences. Therefore, the company should have to give proper training & development program to the executives and employee in respect of systems on-the-job and off-the-job and online training and tests should be conducted for those employees who use the systems to the maximum extent to enhance their skills. So, the potential contributions of integrated systems are recognized, but further advances are need before the potential can be realized. Several responses also reinforced the notion that the system could be more effectively utilized with the addition of some other features that were not currently part of the system.

The support of top management is one of the most important factors in the successful implementation and integration of the systems (Deloitte, 2006). Top management takes primary responsibility for providing sufficient financial support and adequate resources for building successful systems. A comprehensive systems integration requires a sizeable budget to implement and maintain. The lack of financial support and adequate resources will inevitably lead to failure. If top managements do not realize the benefits of effective integration to the organization, they will not be willing to allocate valuable resources to the effort of implementation. Promotional efforts as well as an action plan to demonstrate the concrete advantages of using the system are necessary if top management is to become aware of the benefits that can be achieved from integrating the systems. Therefore, the roles of the top management must be emphasized briefly because all of the changes and willingness will cascade from the top to down and everyone should understand the need and benefits of integrating the systems. In addition, committed managers will take care of communication towards employees to make sure everyone is aware of the new way of working.

The other demanding problem challenged the organization during the implementation and integration the systems, as employee respond were suspicion on security of the information since both employee and customers' data are very houses sensitive. These

confidential details include birth dates, salaries, performance ratings, ethnicity data, home addresses and other relevant information. The security risks intensify the organizations to roll out self-service features that require employers and managers to input their own data. Selecting a system that does not meet the minimum security requirements can make an organization a target for hackers. So the company should consider specific security measure to safeguard against any breaches to their programs, such as limiting access rights among users or encrypting data. Gardner *et al.,* (2007) suggests that utilizing Secured Sockets Layer system ensures the data produced by the organization to be encrypted and not easily hacked by unauthorized users. Therefore, the security systems of the organization should have to ensure that the passwords into the system cannot be easily guessed so as to prevent unauthorized users from gaining access.

Moreover, the integration of the systems also dramatically affect the relationship between executives, employees and customers. Employee used to working with higher executives face to face may find it challenging to use the computer to complete tasks or answer questions since more content is made available online and basic administration is pushed to employees. As a result, they may miss the high-touch feeling of working with higher executives and staffs. Therefore, higher executives of the company should consider the impact of this and take measures to mitigate it.

The third objective of the study was to explore what the future prospects of ERP and CRM system integration should have to looks like to facilitate quality service delivery. Regarding this questions, the employee respond different answers summarized as follow

- ☞ Many respondent indicated the need for additional training and development program on the systems. As their response showed that the training program of the company had not satisfied them and creates grievance with management. The secondary source from the company indicated that the company has a clear policy regarding training and development program but substantial amount of employee complaining concerning its implementation and this will makes difficult for HR department to optimize their contributions to the company's objectives. Therefore, provision of training and development program to employees with the aim of

enhancing their knowledge, skill, and ability makes them always competent and responsive in performing their duties, is considered to be one of the key strategies that enhance the organization's efforts to achieve its objectives.

- ☞ Significant amount of responses indicated that there is a great desire to be better equipped with latest version of the systems and equipment to respond to complex requests from users for improved service delivery since aviation industries are becoming more and more customer oriented with innovative ideas and approaches and many airlines are striving to differentiate their services through branding and more individual treatment of customers in order to ensure customer loyalty. In addition, the company should have to deliver quality service to ensure customer loyalty. In order to achieve such purpose, access to accurate and important information within and outside the organization and efficient use of them play the key role.

- ☞ Some respondents also imply the needs to provide online availability of correct, current, consistent and complete operational data across multiple channels, touch points and company website that could be populated into the company data warehouse for analysis and mining. This response suggested the need to ensure the reliability and timeliness of information in the system to deliver continuously adequate management information that properly supports planning and decision making process.

Finally, this study provided some insights into the integration of ERP and CRM system in Ethiopian Airlines and their contribution to the quality of service delivery process. Further research should address into exploring the roles of ERP and CRM integration in transforming the service delivery process of the among more service sectors organizations by overcoming the challenge mentioned in the study.

4.4.2. Discussion Based on Customers Responses

In this section, the results of the study in line with the objectives of the research are discussed. From 50 questionnaires distributed to customers of Ethiopian Airlines at Bole International Airport, 45 were returned and used for the analysis. The overall response rate was 90 percent. In order to assess the service quality performance, the five dimensions of service quality were used. A summary of the sample characteristics were presented in Tables 4.8 - 4.13.

The air transport industry is one of the world's most important service industries. Air transport is essential to economic progress. In an increasingly global community and market place, air transport makes possible the rapid movement of millions of people and billions of dollars' worth of goods to the market around the world fast and efficiently. In the drive to secure individual and unique customer relationship in order to ensure customer loyalty, more and more airlines are striving to differentiate their services through branding, more individual treatment of customers. Since customers have more choices today and the targeted customers are most valuable to the company, quality service must receive a high priority within the company and very critical in a highly competitive environment such as that of Ethiopian Airlines operating environment. Therefore, Service Quality improvement is key issue that determines the very survival of the airlines itself.

In this paper, five SERVQUAL dimensions and their respective attributes of the model are expressed using a five point Likert scale. According to the result of the study, the tangibility dimension of service quality is carried out superior to the other four dimensions with a mean score of 3.94. This indicates the Ethiopian Airlines is performing at adequate level in possessing good looking equipment, visually appealing materials and neat appearing employees. The second dimension as per the rating of the customers is assurance with a mean score of 3.77. The customer perceived that the company is performing better in having knowledgeable and courteous employees and providing

secure and trustworthy service. The third dimension is reliability with 3.45 mean score. The least performed dimensions are responsiveness and empathy with a mean score of 2.95 and 2.91 respectively. As per the response of the customers, Ethiopian Airlines are not good in delivering responsive and empathic service. This implies the existence of inefficiency in delivering prompt service, helping customers and responding to their inquiries, and understanding individual customer needs.

The mean score values are lower for responsiveness and empathy indicating poor performance of the company in those dimensions of service quality. These are the area where the company needs to work in order to improve customer perception of service quality. To improve empathy in EAL, managers should study their target market precisely; what they really want and how they can be satisfied. Since expanding sales channels require investments, on line ticketing can be appropriate solution. The company has also policy of rewarding frequent customers through Sheba miles program. Having a sound loyalty and mileage program to recognize frequent customers can bring a competitive advantage for EAL. Frequent customers will turn into loyal customers that they can help EAL to survive in competitive environments.

Care and concern for customer's needs can be achieved by training employees with the aim of enhancing their knowledge, skill, and ability that makes them always competent and responsive in performing their duties and prompt service. Moreover, staff that are committed in implementing quality services and gained recognitions from customers should be given better rewards. Executives are often responsible for productivity, customer satisfaction, employee retention, implementation of change and, of course, the leadership of their team members. Successful executives lead their teams to excel in the areas, which leads to increased profitability. So great emphasize should also need to be given for them.

Chapter Five

Conclusion and Recommendations

5.1. Introduction

This chapter presents the conclusion and recommendations arising out of the research findings and objectives. It also gives an insight on the policy implications as well as limitations and suggestions for future studies.

5.2. Conclusion

Providing quality and unique services as required by customers are very challenging for the organizations. As a result, several organizations across the world are using an IT application such as Enterprise Resource Planning (ERP) and Customer relationship management (CRM) to automate and integrate different functions of their departments with aim of delivering quality services to customers. The objective of this study was to explore the achievements, pinpoint the challenges and scrutinize the prospects of integrating Enterprise Resource Planning and Customer Relationship Management (CRM) and analyze their impact on quality service delivery in Ethiopian Airlines.

The analysis of the data collected through questionnaires, interview and secondary data indicated the existence of a strong significant positive relationship between properly integrated ERP and CRM systems and quality service delivery process since the efficiency and effectiveness of each department of Ethiopian Airlines improved through implementation and integration the systems. Since the integration, as the majority of the respondent indicated, the company is enjoying the ultimate benefit of all-in-one system that can decrease errors, lower cycle times, reduces turnaround time, and support management decisions. In addition, the different activities of the company no longer requiring duplicate files and redundant data entry since the company employee now has a ball in their feet. The systems also improved the company ability to access and disseminates useful information and increased the coordination between each department and the customers.

Moreover, the study also used SERVQUAL framework to model and analyze the customer perception gap between expected and perceived service with respective to airlines service attributes as indicator of the perceived service quality and satisfaction. Accordingly, in the responsiveness and empathy dimensions of service quality, the customers' perceived services were lower than what is expected and in the assurance, tangibles and reliability dimensions, their experiences were better than expectations. This indicates that in most dimensions, the company customers are satisfied with the services which they perceived. In addition, it also implies the existence of inefficiency in delivering prompt service, helping customers & responding to their inquiries, and understanding individual customer needs.

Meanwhile, several challenges were also pointed out from the study which undermined the achievement of full potentials of the systems including inadequate knowledge, lack of expertise in IT to operate the systems, lack of financial support to update and maintain the systems, Poor ICT infrastructure, lack of training, lack of commitment and involvement by top management and lot of paper work that is difficult to computerize. In addition, some of those who were involved in the implementations process had a restricted view on the potential of the systems since they just see it merely as a tools to automate the process, rather than transforming the overall service provision process of the company.

Finally, it is concluded that the integrated ERP and CRM system is an excellent tool for the company to deliver quality service but there are still some bones to pick up and the actions that both systems has not absorbed, should need to work on it.

5.3. Limitations and Further Research

The Research was subject to certain limitations that can have impact upon the results received and the conclusions drawn. Limitations in this survey includes

- ☞ There are some possibilities of measurement errors since the study focused on perception of the respondents. This could have resulted in some degree of perceptual inflation of self-assessment scores. Those who enjoyed great satisfaction with the systems may have inflated their responses with respect to their intention to continue to use the systems. In addition, since the questionnaires was also self-administered, there could be situations where respondents may need further clarification, which was not available.

- ☞ Some of the employees was not genuinely forward their opinion because of they are too busy and some senior executives were not willing to express their opinions due to reasons of confidentiality.

- ☞ Because of time and cost limitation the study was only limited to Ethiopian Airlines

- ☞ The static nature of the study also the other limitation since the study is based on the existing scenario of the ERP and CRM integration; but the system can be enhanced in future. Therefore, research should be conducted in the future to know whether the systems are improving with changing time or not within the company.

- ☞ In order to deepen the knowledge in the area of ERP and CRM system integration, the first and most obvious research path is to conduct further deep studies in the area in order to broaden the literature base. This will contribute to the knowledge base in one way or another.

- ☞ The research study was restricted to 165 respondents. Therefore, a detailed research would be needed to explore the functions and contributions of ERP and CRM systems integration, especially; with much, bigger sample size and a higher response rate so that a deeper analysis can be done for generalization.

5.4. Recommendations

In the evolution of organizations, one thing that persisted over ages is the need for change. With globalization of economies and technological advances, this change became more important to exist and sustain. As a result, each and every sub function of an organization should undertakes changes to be innovative and efficient on quality, cost and time. Based on the findings of the study, the following recommendations are forwarded.

- ☞ The management of the company should need to revise their existing IT policies and procedures regarding its quality, implementation rate and its compatibility with rapid technological advancement to provide various functionalities that meet their unit's and company goals.

- ☞ The company should have to identify the right staff and undertake them through training and development program as a means of imparting knowledge and skills that are desirable for the operation of the systems. In addition, in order to gain the competitive advantage, the organization's training and development policy should be clearly redesigned and communicated to all staffs effectively.

- ☞ Each division of the company should have to undertake important steps to enhance the quality of service delivery processes through ensuring accurate and timely data entry; following quality assurance procedures and providing customers and managers with easy access to meaningful and standardized information. These efforts should also be complemented by the implementation of a comprehensive communication and training plan targeted to all employee and executives.

- ☞ The integrated ERP and CRM system must be driven by strategic vision and it should be an open system, where IT facilitates communication freely between integrated features; since such information sharing is crucial to learning organization that view their employees and customers as their main competitive

advantage. Therefore, a comprehensive and effective integration must be driven by organizational vision, value, and culture.

- ☞ Staff that are committed in delivering quality services and gained recognitions from customers should be given better rewards.
- ☞ The management of the company should also need to evaluate & solve the existence of inefficiency in area of delivering prompt service, helping customers and responding to their inquiries, and understanding individual customer needs through training employees with the aim of enhancing their knowledge, skill, and ability that makes them always competent and responsive in performing their duties and deliver prompt service.
- ☞ The company need to put strategies forward to counteract the challenges observed including ensuring the sources of funds to cover the costs of setting up and maintaining the systems, mobilization of financial resources, support from the top management, training of staffs on the operations of the systems, and sourcing for the required expertise. Moreover, managements of the company should carry out a lot of benchmarking from more experienced organizations that already have operating the system and should seek advice on how to undertake cost effective system integration.

5.5. Policy Implications

Policies are central to the development process of any nation or group of people and impact our life either directly or indirectly depending on who we are and where we are. They are the powerful instruments for shaping the future of nations in ways that advance or retard social, political and economic progress. Who makes the decisions and how they are made determines what the outcomes will be. Aside having well balance policies, the issue of policy implementation is very vital to nations. Without any proper linkages between policy framework and effective execution, it is very unlikely policies could be implemented.

As we are in the 21st century, there has been considerable universal attention given to the role that IT can play in economic, social, and service delivery process. This role has been most pronounced in the developed world's companies where technology has transformed their businesses process and changed the way people work and learn. The impact that IT has had to date in the developed world companies, and the potential yet for further dramatic changes, is reflected in a range of policy documents. Today, the role of information technology (IT) in several companies of developing countries like Ethiopia has grown rapidly and this development enabled by changes in technological innovations. Ethiopian airlines is one of the company with high-tech investments and technology to differentiate their services delivery process and led the business to success. These high-tech investments over the years with in the Ethiopian airlines have forced company to adapt policies and regulations that help to manage the rapid changes in technology and its usages.

The Policy focused on securing the benefits of IT growth and its transformative potential in quality service delivery process, in enhancing efficiency and accelerating change. However, the progress has been challenges by many problems. Some are the lag in access to and use of the Internet and broadband, lack of IT skills, poor ICT infrastructure, and etc. Therefore, to address these problems, further clear and brief policies and strategies

which aims to meet broad objectives concerned with enhancing the effectiveness, efficiency and affordability of the service delivery process through IT investments are required, bearing in mind the overall aim of its development is to contribute to the improvement in the quality of life of the users. To accomplish these, the following suggestions are forwarded.

- ☞ Strengthen the capacity of the company to respond to customers demand through IT applications by building greater IT expertise and awareness across the company regarding the potential applications of IT.

- ☞ Building incentives mechanisms for coordination and joint approaches for innovation, reflecting the thematic nature of IT; and transforming the IT equipment to enable it to act as a connector between customers demand and service givers.

- ☞ Design and implement IT application projects consistently taking into account the company capabilities and readiness, complementary investments in infrastructure and training, and the need to support cross-sectorial enablers, including the revision of existing policies and standards that would apply across service sectors, and apex institutions to effectively lead the IT agenda across the country.

- ☞ The capacity of executing, monitoring and evaluating technology and service delivery policy should be enhanced through training.

- ☞ Since any law or policy require resource for its implementation, it is necessary to provide adequate financial, human, and material inputs.

- ☞ The government should also be involved in providing environment that support quality service delivery process through encouraging the better use of information technology and increase the country competitiveness, productivity and growth through investment in information technology, e-business and new business models.

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Appendix –A

Addis Ababa University
School of Graduate Studies
Collage of Business and Economics

Questionnaires for Employees of Ethiopian Airline

Dear respondents, this is a research titled **"Integration of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) for Quality Service Delivery: Achievements, Challenges & Prospects in the Case of Ethiopian Airlines"** The research is carried out in order to fulfill the requirement of School of Graduate Studies of Addis Ababa University for the Master's degree in Public Policy Studies. You have been selected as a respondent to this questionnaire because I believe the information that you will provide will be very useful in enabling me realize the objectives of the study. In answering the questions you may be requested to put a tick (✓) mark inside the box that indicate your level of agreement for each statements. I highly appreciate the fact that you have taken time to fill in this questionnaire. Thanks.

Markos Mulat, 0912689710

Part 1:- Background

1. **Gender** Male ☐ Female ☐
2. **Age** under 25 ☐ 26-35 ☐ 36-45 ☐ above 45 ☐
3. **Educational back ground**

   Diploma ☐ BA/B.Sc. Degree ☐ MA/MSC ☐

   PHD ☐ If other ☐
4. **Work experience in the organization**

   1- 5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ over 20 years ☐

Part 2:- Questions related to the topic

1. **How do you rate the achievements in service quality as a result of adopted ERP and CRM modules in your company (Ethiopian airline)?**

	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Remark
	ERP-Human Capital Management module (ERP-HCM)						
1	The system recruit and leverages employee's talent in the right place and at the right time						
2	The system make easy for those employees who are better performers able to receive higher pay increase than poor performers						
3	HCM system reduced the time, error and costs of payroll processing and reporting & improved the quality of work performed						
4	HCM system analyzes & establish clear objectives & detailed training plan relevant to the employee need.						
5	The system performs comprehensive tracking of HR functions & HR objectives are integrated to the overall missions and vision of the company						
6	The systems supports customers and employee files to be completed accurately and held currently						
7	e-Recruitment system of the company linked to the HR objectives of the organization.						
8	HCM system has improved employee ability to disseminate information & increased the amount of useful information						
	ERP-Supply & Logistics Management (ERP-SLM)						
1	The ERP-SLM system increased sales volume (i.e. ticket)						
2	The system minimized delays in the delivery of goods and services.						
3	The system resulted with reductions in inventory and in material, labor and overhead costs						
4	The activities of supply chain no longer require duplicate files and redundant data entry.						
5	The system improve the interaction b/n business units						

6	The supply & logistics system minimize the amount of touches & the touch time in supply chain transactions, so as to reduce the number of potential failure points						
7	The system analyze & plan supply and demand appropriately						
	ERP-Advanced Planning and Scheduling (ERP-APS)						
1	The APS system enhanced the forecasting, planning process and scheduling, order processing,						
2	The APS system capture the creative insight of employees by soliciting their ideas for better planning						
3	APS act as a catalyst for improving the company performance & support tactical planning processes.						
4	The APS system make the best use of people, process, technology and information in order to increase service levels and reduce operational cost						
5	The process of planning & scheduling has in most cases been manual and quite unstructured before the implementation of APS system						
6	Information management policies and procedures for quality service delivery process is underway and showing good progress.						
7	There are problems in the area of information flow management						
	ERP-Finance and Control module (ERP-FICO)						
1	The company consider the consumer's property						
2	The system increase service levels and reduce operational cost						
3	The implemented financial module reduced the financial cycle closing time						
4	The activities of financial accounting no longer require duplicate files and redundant data entry.						
5	As a result of FICO system implementation, the financial reports can be easily customized to meets the needs of various decision makers.						
6	The system helps employee to manage data involved in any financial and business transactions in a unified system						

Statements Customer Relationship Management (CRM) module		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Remark
1	The implemented CRM system improves customer relationship & increased customer loyalty & retention.						
2	There are sufficient on line support features for customers regarding the company service						
3	The system improve customer knowledge about the service the company offers						
4	A central database is accessible by all employees to view and update customer data						
5	The systems made customer files to be easily accessed and decreased the time spent on communicating information within organization.						
6	The system makes the best use of people, process, technology, and information in order to increase service levels and reduce operational cost.						
7	The CRM system enhanced ability to target profitable customers						
8	Customer complaints reduced						
9	Customers easily find all relevant information about the company (e.g., ticket prices, options, shipping information, order status) on the company website						
10	The system make easy to know and recognize customers, understand them and care about their needs						

2. Challenges of Integrating ERP and CRM modules

Challenges of Integrating ERP & CRM modules Statements		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Remark
1	There are insufficient financial support for effective ERP and CRM system implementation & integration						
2	Poor ICT infrastructure (Network failure due to poorly developed telecommunication setup)						
3	Inadequate knowledge (lack of training) in implementing and integrating the system						
4	Ineffective communication system						
5	Lack of commitment from top managers are barriers for effective ERP and CRM integration						
6	A lot of paper work that is difficult to computerize						
7	Poor employee attitudes toward the system (Lack of commitment)						
8	Resistance from employees because they prefer traditional methods						
9	Keeping data protected all time from being accessed by unauthorized persons makes ineffective system						
10	Inefficient internal processes						

3. What to should be done to ERP and CRM systems integration in the future to improve service delivery process?

1. _____
   _____
   _____

2. _____
   _____
   _____

3. _____

Appendix –B

Addis Ababa University
School of Graduate Studies
Collage of Business and Economics

Questionnaire for Customers of Ethiopian Airline

Dear respondents, this is a research titled **"Integration of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) for Quality Service Delivery: Achievements, Challenges and Prospects in the Case of Ethiopian Airlines"** The research is carried out in order to fulfill the requirement of School of Graduate Studies of Addis Ababa University for the Master's degree in Public Policy Studies. You have been selected as a respondent to this questionnaire because I believe the information that you will provide will be very useful in enabling me realize the objectives of the study. In answering the questions you may be requested to put a tick (✓) mark inside the box that indicate your level of agreement for each statements. I highly appreciate the fact that you have taken time to fill in this questionnaire. Thanks.

Markos Mulat

Part 1:- Back ground

1. **Gender** Male ☐ Female ☐
2. **Age** under 25 ☐ 26-35 ☐ 36-45 ☐ above 45 ☐
3. **Educational back ground**

   Diploma ☐ BA/B.Sc. Degree ☐ MA/MSC ☐

   PhD ☐ If other ☐
4. **Occupations:**

   Student ☐ Government official ☐ Private Employee ☐

   Self-employee ☐

Part 2: Questions related to the topic

How do you rate service quality in Ethiopian airline related to the following service quality dimensions?

Reliability Statements		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Remark
1.	The company do things by the time they promise						
2.	Employee are dependable in handling customers' service problems						
3.	The company have system that maintain error-free records						
4.	The company perform services right the first time						
5.	The company track customers need efficiently.						
6.	There are respectable transfer service and efficiency at departure airport						
Responsiveness							
1.	There are sufficient on line support features for customers						
2.	Employees are never too busy to respond to customers need (understand the specific needs of customers).						
3.	The company announces any delay of service ahead of time						
4.	Employees of the company have willingness or readiness to help customers & provide quality service						
5.	The company have system that eliminated bureaucracy by providing direct access and real time data						
6.	The company have well-designed complaint handling mechanisms (capable to response to emergency situations)						

Tangibility Statements		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Remark
1.	The company uses physical representations of the service, such as a plastic credit card to provide QS						
2.	The company have up-to-date equipment (Modern equipment)						
3.	The company keep the appearance of its physical facilities in right way to provide quality services						
4.	The company has visually appealing materials associated with the service.						
5.	Employees who have a neat, professional appearance						
6.	The company offers varieties and choices of in-flight entertainment facilities						
Empathy							
1.	The company offer greater range of service with more flexibility to customers						
2.	The company eliminate problems of customers from growing up through improved communications						
3.	The company provide direct access and real time data to customers through company website						
4.	The company have other travel related partners e.g. car rental, hotels, travel insurance						
5.	The company gives customers individual attention (ex. For pregnant, elders, disables…)						
6.	Convenient flight schedule						
Assurance							
1.	Employee are sincere and patient in resolving customers problems						
2.	There are high probability of flight breakdowns						
3.	Employees instill confidence to customers						
4.	Customers feel safe in the transaction with the company employees						
5.	The employees have knowledge and courtesy to convey trust and confidence in the service provision						
6	There are effective safety performance in the airline						

THANK YOU FOR YOUR TIME IN FILLING THIS QUESTIONNAIRE AND HELPING ME WITH YOUR VALUABLE INPUTS. M M

Appendix-C

Addis Ababa University
School of Graduate Studies
Collage of Business and Economics
Department of Public Administration & Development Management

Interview Questions for Managers of the Company

1. Why the company implemented and integrated ERP and CRM systems
2. What are the key successes of ERP and CRM integration in your company?
3. Do you believe that ERP and CRM systems are successfully integrated in your company?
4. Do you think service delivery process are impacted as a result of ERP and CRM system implementation and integration? If yes how?
5. Do you feel that your customers are satisfied with the service they receive from the company ?
6. Do training and development programs given regarding ERP and CRM system integration to employee before using the systems being implemented
7. What major challenges did you face so far as a manager and what threats are there for sustaining the system?
8. What improvements have made to increase service quality and customer satisfaction
9. Do the systems fit in to your work culture?
10. Do you think that employee participate in decision making process?