

Integration of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) for Quality Service Delivery. The Case of Ethiopian Airlines

Markos Mulat Gebreyes

Collage of Business and Economics, Addis Ababa University, P.O. box 1178, Addis Ababa, Ethiopia

Abstract

Service quality and customer satisfaction are very important concepts that companies must understand in order to remain competitive in business. In the process of delivering quality service and meet customers' need, 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) and Customer Relationship Management (CRM) and analyze their impact on quality service delivery in Ethiopian Airlines. A structured questionnaire was designed, pre-tested, modified, and 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. 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 and the response rate was 73.1 and 90 percent respectively. 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. In addition, the findings 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 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 presence of inefficiency in delivering prompt service and understanding individual customer needs.

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

1. Introduction

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 (Parasunaman *et al*, 1988). 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. Park *et al* (2004) 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.

Ethiopian airlines is one of the service sector company operating in Ethiopia. The company previously had a range of individual systems for controlling and monitoring their functions, which had problems of interfacing with each other as they had different databases and file formats. 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.

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).

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). 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 paper, therefore, sought to find out the achievements, pinpoint the challenges and scrutinize the prospects of integrating (ERP) and (CRM) and analyze their impact on service delivery in Ethiopian Airlines within the perception of senior executives, middle-line managers and customers.

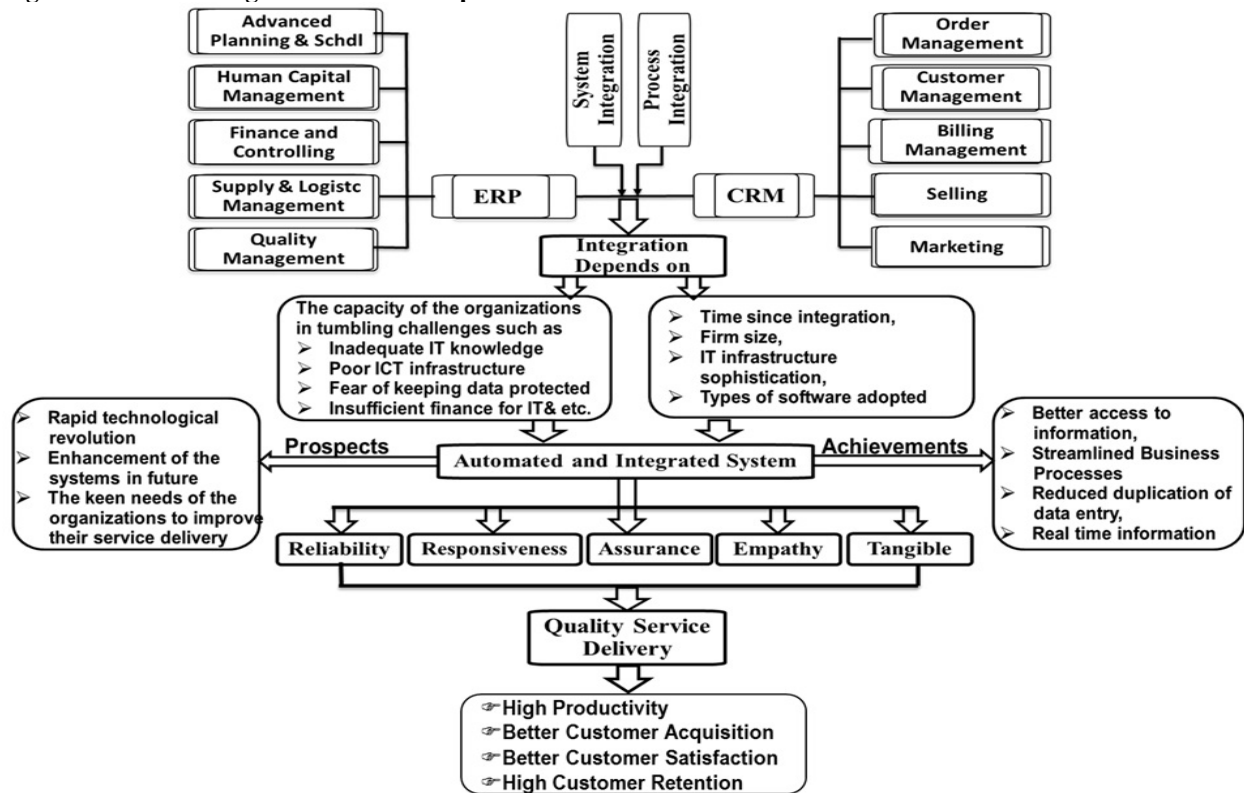
2. Methods

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 as it exists at the time of the study and help to explore the causes of particular phenomena (Kothari, 2004). Although there are time and other anticipated limitations to visit all service sectors organization, the researcher attempted to visit only Ethiopian Airlines in order to incorporate the important personnel who can provide 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.

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 opportunity and threats of ERP and CRM system integration.

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.

Fig 2.1 Schematic diagram for the conceptual framework



3. Results and Discussions

All ERP packages contain several modules. The number and features of the modules vary with the ERP package and provide different functionality and support different business functions such as planning and scheduling, inventory management, human capital management, supply chain management, financial administration system. These modules are combined through a common data base system to supports the integrations among different business functions. Human Capital Management system module is one of the component of ERP modules that helps to store, analyze, distribute and use information related to 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. Today, in Ethiopian Airlines, The system links all human resources data from the time professionals enter pre service training to when they leave the workforce. The company employ candidates through online system that reaches a wider audience than posting advertising vacancies in print media. The online recruitment process brings the company close to the potential employees, and when an application is not suitable for the position applied for, the company retaining the resume in their database for future openings that may be right for the applicant. However, as the result shows, 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 the ERP-HCM system is to reduce the time spent on administrative processes. But, as the results shows, the effects of the system on time savings are mixed since the company spent significant epoch 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. In addition, half of the participants believed that the system not employed its impact in leveraging employee's talent in the right place and at the right time. This designates a more effective and updated sorting tool must be in place. 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. Since the process is virtual system, questions are addressed quickly and the information flow from both sides are unimpeded.

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. However, 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. Different literature implies the implementation of the Advanced Planning and Scheduling (APS) ERP system overcome all this shortcoming through redesigning the business and planning processes, creating new working procedures, and defining roles and responsibilities. As the study result indicates, the Ethiopian Airlines adopted APS system to facilitate changes in the planning processes and to experience more streamlined processes in general. After the adoption, the company enjoying the far-reaching functionality of the system as it improved the overall tactical, operational and strategic level planning. In addition, as different literature shows (i.e. Consortium PSLX, 2005), the efficient use of the APS systems for strategic planning leads to enhanced professional standing in the organization. However, the systems appears to have little effect on the performance of the company since the users were not well familiarized and develop their own standing about using the systems. This means that the Ethiopian Airlines 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.

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 of the study indicates, 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 the company and with the customers who are the main force of attraction for a supply chain. After implementing the ERP-SLM system, all the activities are coordinated and executed to ensure higher levels of on time delivery across the chain. In addition, the adopted supply and logistics management (SLM) ERP system increased the company sales volume (i.e. ticket) and resulted with reduction in inventory and in material, labor and overhead costs. Moreover, as a result of the integration, the activities of supply chain system of the company no longer requires duplication of files and redundant data entry and the interaction between different business units improved.

In relation to ERP-Financial Accounting and Controlling modules, the study indicates that the implemented financial module reduced the financial cycle closing time, reduce the operational cost and the financial reports can be easily customized to meets the needs of various decision makers. Since the adoption, the Finance and Controlling components of the ERP solutions work hand-in-hand in the company to improve the bottom line and tightly integrated all business areas. Within the system, all areas work in concert and creating a new level of efficiency in handling the financial data and follow a uniform system of reporting. The system provide the companywide control and integration of financial information that is essential to strategic decision making. 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. In the company,

Customer Relationship Management (CRM) is a broad term that covers concepts used by companies to manage their relationships with customers, which may include attracting, analyzing, retaining and satisfying the customer (Rigby and Ledingham, 2004). It contains the processes that build a business management model centered on a 360° approach to the customer (Payne and Frow, 2005). The Ethiopian Airlines adopted the CRM systems to serve the purpose of getting closer to customers, and engaged in a learning journey about the customer and to improve the way of doing business. The company 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. They 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, the company have not been able to take full advantage of this insight. In addition, company face big challenges when trying to integrate CRM and ERP systems. To overcome these difficulties, 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. Moreover, the measurement of CRM program effectiveness should also be 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.

Integrating ERP and CRM system ultimately provide insight, creating a single, and 360-degree view of

organizational profitability (Hendricks et al, 2007). Since the integration, the Ethiopian Airlines enjoying tremendous efficiencies and throughputs ability to administer in parallel many processes that are related but independent of each other. Back office and front office will no longer be isolated, but working hand-in-glove to anticipate customer demand rather than react to it. The integrated system providing the company the real-time responsiveness and enabling powerful capabilities of concurrent processing, which would be impossible without the systems. The integrated solutions also bring together previously disconnected business processes by automating complex, multistage processes in an end-to-end manner. When the 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.

Several challenges were also pointed out from the study which stalled the predetermined objectives of the ERP and CRM system implementation and integration among of which included; 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 presence of gaps in the ERP-CRM system hindered the quality delivery of services.

Finally, 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. 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 which implies 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.

4. 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 training, ineffective communication system, lack of commitment & involvement by top management fear of

keeping data protected all time from being accessed by unauthorized persons 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.

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