



PRACTICES OF ENTERPRISE RESOURCE PLANNING SYSTEMS IMPLEMENTATION IN KENYAN UNIVERSITIES

Koech Charles Cheruiyot

Director ICT

ICT Department

County Government of Bomet, Bomet, Kenya

Abstract

Enterprise Resource Planning (ERP) systems provide institutions with the opportunity to integrate individual stand-alone information systems thereby becoming a significant tool to improve transparency, efficiency and effectiveness. However, most institutions in Kenya have not successfully implemented it and thus not realizing the envisioned benefits. The objective of the study was to find out reasons for implementing ERP in Kenyan universities and the practices. The researcher adopted a case study methodology and the main instruments of data collection were structured questionnaire, administered through purposive and random sampling, and semi-structured interviews. The findings indicated that the main reasons for ERP implementation by universities are to modernize institution's environment and increase efficiency and accountability. The findings also indicated that the university has adopted several practices including establishment of IT department to spearhead ERP implementation and monitoring of the system for continued performance. Responses from both questionnaire and interviews agreed that education and training of users should be done before, during and after implementation of ERP to enhance the usability of ERP. Proper documentation should be developed and reviewed regularly so as to be effective to the intended users, amongst other practices. The study recommends embracing best Information Systems practices, adoption of new tools and technologies for quality assurance, establishment of IT department to spearhead ERP projects and other Information Systems (IS) projects, monitoring and evaluation of system for continued performance, preparation and updating of ERP documentation, and thoroughly testing of ERP systems before 'go-live', amongst other practices.

Index Terms: Enterprise Resource Planning (ERP); Implementation; Practices

1 INTRODUCTION

This paper sought to address the reasons for implementing Enterprise Resource Planning (ERP) in Kenyan universities and the practices associated with its implementation.

1.1 Background to the Study

Enterprise Resource Planning (ERP) is one of the technologies that many organizations and institutions have adopted. In the current competitive world, organizations, institutions and government agencies have to adapt themselves into the constantly changing and evolving conditions in order to survive and advance (Saad, 2009; Aris et al., 2009). It is necessary to establish a common information system infrastructure and to integrate the corporation business workflows to this system so as to increase efficiencies in the day-to-day operations.

Kumar et al. (2000) define ERP systems as "configurable information systems packages that integrate information and information-based processes within and across functional areas in an organization". This software eases, if well implemented, the integration of all the functional or modular information flows across the organization into a single package having a common database (Terry, 2005). Thus, it allows easy and immediate access to information regarding such things as inventory, product or customer data, and prior history information (Shehab et al., 2004).

Many organizations worldwide, including Kenyan universities, are replacing their functional legacy systems, which are no longer compatible with modern business environment, faster with ERP systems. ERP systems have become critical in enhancing information integration between internal organizational environment and external business environment and regarded as enterprise nervous system (Saad, 2009). Nah and Lau (2001) and Turban et al. (2006) agree that most ERP systems now have the functionality and the capability to facilitate the flow of information across all business processes internally and externally.

Setting up a common information system infrastructure, otherwise called ERP, is not easy and comes with challenges making some systems have complete failure, partially successful and others successful, though the latter is difficult to achieve.

According to AMR report published by Simon et al. (2006), ERP software market is one of the fastest growing markets in the software industry because of its associated advantages. ERP system has become a widely accepted (*de facto*) choice to obtain competitive advantage for most companies and institutions. Furthermore, other significant benefits for adopting ERP system include reduced operating and maintenance time and costs, improved customer service management, better production scheduling, improved inventory management, and streamlined operations, among others (Mary and Zhenyu, 2007; Bhatti, 2005) However, these benefits are often difficult to achieve depending on whether the ERP system is implemented successfully or not.

Implementing an ERP system is time consuming and costly since an ERP system once implemented is extremely difficult to reverse as it is too expensive to undo the changes ERP brings into an organization (Brent et al., 2008). There are several failed ERP attempts, and companies lost not only invested capital in ERP package, but also a major portion of their businesses (Nah and Delgado, 2006). Therefore, ERP implementation is thought to be intricate and needs to be carefully managed to reap the benefits of an ERP solution (Bingi et al., 1999). In addition, the difficulties and high failure rate in implementing ERP systems have been widely cited in the research papers.

1.2 ERP Definition and Benefits

Various authors have defined ERP. Kumar et al. (2000) define enterprise resource planning (ERP) systems as “configurable information systems packages that integrate information and information-based processes within and across functional areas in an organization”

Peter et al. (2009) defines ERP as an integrated software solution used to manage a company or institution’s resources. The basic architecture of an ERP system is built on one database (see figure 1.1 below), one application, and a unified interface across the entire enterprise. According to O’Leary (2000), ERP systems have the following characteristics: Allow real time access to the data; Utilize a common database that stores each piece of data once; Process majority of an organization’s transactions; Integrate the majority of a business’s process and operations and Packaged software designed for a client-server environment, whether local or web-based.

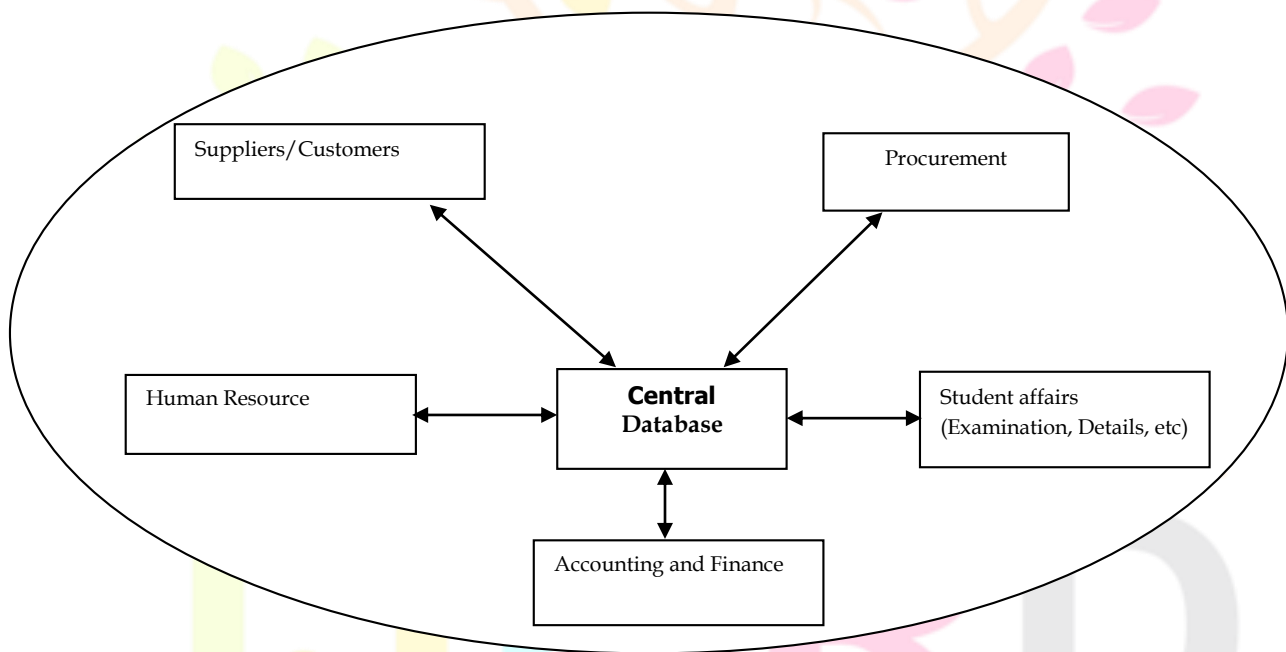


Figure 1.1: An overview of ERP system

According to Kadir (2006), the main objectives of an ERP application can be summarized as: Expedites, integrates and maintains the standardization of business workflows; Eliminates the problem of synchronizing changes between multiple systems; Provides top-down view of the enterprise; real time information is available to management anywhere, anytime to make proper decisions; Facilitates business learning, empowering, and building common visions; Provides the coordination, cooperation and integration among the functional units; Eliminates the repetitive data entry within the organization since modules access same data from the central database thus avoids multiple data input and update operations; Permits control of business processes that cross-functional boundaries and reduces the risk of loss of sensitive data by consolidating multiple permissions and security models into a single structure.

Nonetheless ERP systems have disadvantages including: Design and implementation are time consuming; It is very expensive. Cost can vary from thousands of dollars to millions. Business process reengineering and customisation cost, in particular, may be extremely high. The purchase price for ERP software is the most visible expense, but implementation and maintenance contain many hidden costs; the time and resources required to implement and maintain ERP systems far exceed original

expectations; Complex due to presence of too many features and modules; Some ERP systems are vendor dependent and thus tying organization's hands limiting efficiency of the system and that modules may not conform to organization's needs, strategic goals and culture

These drawbacks associated with ERP systems call for the need to identify best practices which would yield successful implementation.

1.3 Motivations for Implementing ERP by Kenyan Universities

There are several reasons why universities are replacing their legacy systems with ERPs. According to Gartner (2006), some of these are:

- a. Transform how institution carries out its operations.
- b. Replace aging legacy systems
- c. Improve service to customers
- d. Modernize campus Information Technology environment
- e. Keep institutions competitive
- f. Provide better management tools
- g. Increase efficiency and accountability

2. RESULTS AND DISCUSSION

Descriptive statistics, component and factor analysis were used to analyze the data; the results were then presented in charts, graphs and tables. The first objective sought to find out the reasons for implementing ERP system in universities. Modernization of institution was responded as the main reason for implementing ERP in universities followed by need to increase efficiency and accountability. Other reasons included need for system integration, keep institution competitive and the necessity to provide better management tools. Use of ERP for commercial purposes was ranked the least.

The second objective was to find out the practices of ERP implementation in Kenyan universities. Responses from both questionnaire and interviews agreed that education and training of users was done before, during and after implementation of ERP, thus enhancing the usability of ERP. The respondents also agreed that the documentation developed was reviewed regularly so as to be effective to the intended users. Furthermore, the respondents agreed that the ERP is continuously monitored and evaluated in the university for continued performance. Another finding was that the university should have an established IT department to spearhead ERP project besides clear definition of system roles during ERP implementation.

3. CONCLUSION

ERP system is a large information system implementation project with a vast impact on a number of different areas regarding the organization that implements it and its stakeholders. Implementing an ERP system is complex, expensive, and time consuming since it is designed to offer total solution supporting major functionalities of an institution.

The findings established that the universities have adopted a number of practices in ERP implementation at various stages of ERP development, the good practices include; presence of established IT department to spearhead ERP projects and other Information Systems (IS) projects, monitoring and evaluation of system for continued performance, preparation and updating of ERP documentation, and thoroughly testing of ERP before 'go-live', amongst other practices. These practices can further contribute to successful implementation of any IS projects, including ERP.

The study also noted that modernization of institution's environment was agreed by many of the respondents as the primary reason for implementing ERPs in universities besides the need for efficiency and accountability.

4. RECOMMENDATIONS

To improve the success of ERP systems implementation in universities, the study recommends:

- i. Before the institution decide to implement ERP system, it's suggested that the management and the employees should receive ERP-concerned education and training, which enables them to realize what ERP is, what ERP could achieve (both benefits and risks), and what significant changes ERP will bring. Having this knowledge and before-hand education and training is one of the essential issues that enable the ERP system being smoothly carried on.
- ii. The study also recommends embracing best practices, ERPs monitoring, adoption of new tools and technologies for quality assurance to improve system testing.
- iii. Universities intending to implement ERP should establish and fully equip IT or Computer Science department, which will spearhead ERP development and implementation.

5. SUGGESTIONS FOR FURTHER RESEARCH

The study further recommends on the following as areas for further research:

- i. The impact of standards, such as ISO, and best practices in ERP systems implementations in universities.
- ii. Assessing organization readiness for ERP implementation

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