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Impediments in Implementing the Enterprise Resource Planning Systems in Public Universities

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Abstract— **Despite the heavy investment in the ERP systems, it is not yet vivid how Kenyan Universities have involved users in the implementation of the enterprise resource planning system for the realization of their operations to obtain the benefits from the investment. In close examination of previous studies on whether the ERP system implementation at the university was successful or a failure, most of the users responded that it was a success while a few indicated that the implementation was below average. This study sought to evaluate the challenges encountered in implementing the ERP systems in public universities in reference to user involvement. This research was guided by Information Systems Success Model and Diffusion of Innovation Theory. The researcher adopted a descriptive survey research design and the area of the study was at Kisii University. The target population comprised of 300 respondents. The researcher used questionnaires for data collection from the sample size of 65 respondents who were picked randomly. The collected data was analyzed by descriptive statistics methods of mean and standard deviation. Then the results were presented in form of tables. The overall results revealed that respondents agreed (M=2.31; SD=0.972) that there were challenges facing the implementation of the ERP systems in public universities in Kenya. The study concluded that the ERP system implementations are faced by varied impediments which should be overcome to ensure smooth information systems implementation. Further the study recommended that in as much as the university rolled out the implementation of the ERP system which is ongoing, it has not fully done so to realize its full value of the system and as such the university should consider the ERP system implementation challenges for they are fundamental for the success of the ERP system implementation in public universities.**

Index Terms— **Enterprise Resource Planning System, Challenges, Implementation, Information Systems.**

I. INTRODUCTION

An enterprise Resource Planning (ERP) system refers to the application solution that integrates business functional units and data into a single system to be shared within an organization, though the initial implementation of enterprise resource planning systems were observed in manufacturing industries, universities have taken up the systems to provide institutional-wide automation for their operations (Ferrell, 2003).In India, according to Gupta (2013), enterprise resource planning systems have gained extensive demand in the 21st century owing to their holistic approach to organizational management.

In spite of plentiful advantages of enterprise resource planning systems, their thriving implementation has been better said than done (Venkatesh *et al,* 2003; Marchewka, Liu & Kostiwa, 2007).With more users seeking to link application systems to departmental operations, public universities are seeking ways to integrate their processes in a bid to cut on operational costs, offer timely response to their clients and interact with their stakeholders in 'real-time'. To keep up with the management apprehension in the 21st century as noted by Nyandiere *et al.* (2012), universities have turned to enterprise resource planning to substitute their legacy systems.

Upon accomplishment, these systems are anticipated to provide increased efficiency and effectiveness of operations, diminish overhead costs in ICT, get better decision making, improve resource management as well as building business innovation while supporting strategic change (Sullivan & Bozeman, 2010). In the course of the current seeking to establish the effect of some of these factors in the implementation of enterprise resource planning systems in public universities in Kenya, prior studies in developed societies such as Shah *et al.* (2011) cited factors such as top management support, user involvement, vendor support, overlooking of change management aspects, turnover of vendors team member, transfer of top management in beneficiary institutions as crucial factors affecting successful implementation of ERP systems in institutions.

As eluded above, user involvement is of great significance in the ERP system implementation. Various studies have distinguished that user involvement (UI) and user participation (UP) are important factors affecting project outcomes (Kappelman *et al*, 2006; Khang & Moe, 2008; Ngai *et al*, 2008; LePage, 2009). Inadequate user involvement has even been identified as contributing towards a distressed enterprise resource planning system (Havelka & Rajkumar, 2006). Millerand and Baker (2010) asserted "that the user concept itself is underdeveloped in theory". Locke *et al.* (1986) argued that "user involvement is a tool, not a panacea".

The consequences of involving users in the ERP implementation is a better fit between the consequential system and the business operations (Panorama Consulting Group, 2013). Any system implementation must track the best approach, for better outcomes. There are two strategies to implementing the enterprise resource planning systems in an organization: reengineering business processes and the ERP customization (Shehab *et al*, 2004). Despite of these approaches, the implementation of the ERP systems in public universities has been described as a challenging undertaking (Rabaa *et al*, 2009). One study found that in 60% to 80% of higher education contexts, the ERP implementation failed to meet the projected outcomes and the results of implementation were found insufficient (Mehlinger, 2006).

Public universities have made considerable investments in enterprise resource planning (ERP) system implementation to get better institutional business operations (Mehlinger,

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2006). Separate legacy systems were "incongruent" and have led to "replica resources and services" (Allen & Kern, 2001). ERP enables public universities to merge disparate data and legacy systems and adopt best-of-breed processes and contemporary technology. According to Abugabah and Sanzogni (2010), higher education institutions spent more than $5 billion in ERP investment during the last few years. Enterprise resource planning (ERP) system used in public universities integrates administrative functions that have been supported by separate legacy systems in the earlier period (Zornada & Velkavrh, 2011).

The literature reviewed asserts that most researchers have emphasized on other factors which they deem critical for the ERP system implementation success giving less attention to the user involvement and user factors too as one of those factors (Shah *et al.,* 2011). This creates gap in this study that needs to be investigated.

A research done at Cleveland State University in United States by Swanson (1974) identifies the "renowned wisdom" that "users ought to be 'involved' in management information systems development and implementation, unfortunately, what is meant by involvement is rarely clear". The author did suggest that the measurement of involvement should be based on their activities whether as a user or as a facilitator of its development.

User factors play a major role in the implementation of information systems in organizations. Researchers have given attention to some user factors whilst less consideration has been given to User self-efficacy that can be recognized as a self-motivator. People who are extremely confident of their abilities to share beneficial understanding are more inclined to impart that information to others with the certainty that the knowledge they share will lend a hand to resolve issues or improve performance (Liao & Hsu, 2013).

Another user factor is trust which is a much-argued factor that always facilitates system implementation between two entities (Saba *et al,* 2012). Within the context of online social system based information sharing, trust is an initial condition required by communities to participate and share their ideas and opinions. The existence of trust plays an important role in cheering system adoption among members (Chai & Kim, 2010).

The user's attitude is to learn and use of the software only when the top management support and make available appropriate incentive for that. Enjoyment in helping others refers to a motivation to help others without expectation of a return Papadopoulos *et al*, 2013). In a review of the literature on system implementation, enjoyment in helping others is described as self-sacrifice (Svetlik *et al*, 2007). According to Arumugam (2001), he disputes that being short of celebration when success and extreme results have been achieved, tends to promote bad performance.

Diverse factors applicable to the ERP system implementation success or failure have been explained in past studies although, mostly the studies have been carried out in developed countries. (Moohebat *et al,* 2010). Presently developing countries like Australia are equally devoted to adopt the ERP systems in their universities, nevertheless, the factors that affected the ERP implementation in developed countries may also need to be researched in the context of developing countries like Kenya. The past research confirms that success of the ERP system implementation is problematic. Implementation of the ERP system is not an easy task as it is anchored on socio-technical factors relating to people, organization and technology. The failure pace of the ERP system implementation is disappointing (Moohebat *et al.,* 2010; Leon, 2008).

Varied challenges that organizations commonly faced during the ERP implementation had been addressed in the past research (Spitze, 2001; Thavapragasam, 2003). A study done in New Zealand by Leon (2008) mentioned that 69%, 28% and 13% failure rate of the ERP systems due to people, process and technological troubles respectively. It shows that people problems are more significant as opposed to the rest ones.

Numerous factors affect the ERP adoption in organizations (Shah *et al.,* 2011). These factors include user involvement (Francoise *et al.,* 2009; Rasmy *et al.,* 2005). The involvement of the users during the phase of defining organizational information needs may decrease the resistance of users towards the ERP system implementation. The user involvement leads to better user requirements, achieving better quality system and system usage (Motwani *et al.,* 2005).

The factors explored in developed countries have not been found different, this research on the evaluation of user involvement in the implementation of the ERP system in public universities in Kenya which is a developing country found a contextual gap to fill hence the motive of this study.

Implementation of the ERP system, just like any other information systems, encounters several issues and challenges (Mahammadreza *et al* (2015). It is fascinating that only 63% of organizations consider their ERP projects were successful around the world in 2014, and this rate is much lower for Iranian organizations in Asia, which ERP is new to them and have failed in most of the cases. This was attributed to technological factors and individual factors like lack of user involvement. Further, a research done in Thailand converges with the findings of Helo *et al* (2008) who agrees that unlike other information systems, the major problems of ERP implementation are not technologically related issues, but mostly organizational and human related issues like resistance to change, organizational culture, incompatible business processes, project mismanagement, top management commitment and human related issues which have been given less attention.

In central Europe, a study done by Hussain and Fadi (2014) confirms that technological and administrative challenges influencing the ERP system implementation in public universities in Europe have been described but they have not considered how users as a challenge too are incorporated in the implementation of the ERP system. It is in these contextual gaps that this research is geared towards filling.

II. LITERATURE REVIEW

A. THEORETICAL FRAMEWORK

This thesis was developed on the theory of Diffusion of Innovation by Rogers, (1992).The theory was used to present a theoretical stamina to the study. Besides the employment of Diffusion of Innovations Theory, the study further advocated for the use of Information Systems Success (ISS) model to further review the key variables in this study.

B. Diffusion of Innovations Theory

Diffusion of Innovations (DOI) theory was infused by Everett M. Rogers in 1962 and later improved in 2009. It is a comprehensively used theory in social science disciplines. The theory has its basis in communications and seeks to explain how an idea or product gains momentum and spreads through a specific population or social environment. The result of this diffusion is that users take up the new thoughts or innovation. Adoption as brought out in the theory assumes that users react differently to an innovation compared to previous products or innovations. This facilitates the diffusion process Wang'ombe and Kyalo (2015).

Diffusion of Innovations Theory postulates that theoretically, 49%-87% of the discrepancy of an innovator's rate of adoption is explained by its perceived attributes, type of innovation decision, and nature of social systems which the innovation is diffusing and the extent of the agents' promotion hard work in diffusing the innovation (Nzuki, 2012). The theory is useful to both the developers and the users of ERP systems in evaluating how these systems are implemented in various projects.

As argued by Rogers (1995), an innovation such as the use of the enterprise systems in management of higher education institutions is regarded as a technological innovation. This is realized as a result of paradigm shift to integrated information systems from stand-alone information systems. As postulated by Sahin (2006), the process of implementing new innovations as explained at length by Rogers (2009) in the book, Diffusion of Innovations, the researches cited in the publication border on various disciplines including education and technology.

The theory as highly developed by Rogers (2009) has found prevalent usage in understanding technology diffusion and adoption. As affirmed by Medlin (2001), the theory is useful in investigating the implementation of technology in higher education environments. In carrying out the research, the theory is useful in evaluating the user involvement in the implementation of the enterprise resource planning systems in public universities in Kenya.

Everett Rogers' diffusion of innovations theory is mainly appropriate for investigating the adoption of technology in higher education and educational environments (Medlin, 2001; Parisot, (1995). In fact, much diffusion research involves technological innovations so Everett Rogers (2003) more often than not used the word "innovation" and "technology" as synonyms. Essentially according to Rogers he defines the term technology as a design for instrumental accomplishment that minimizes the uncertainty in the cause-effect relationships involved in achieving a desired result. It is consists of two parts: hardware and software. Whilst hardware refers to the tool that embodies the technology in the form of a material or physical object, software refers to the information base for the tool (Rogers, 2003). Since software (as a technological innovation) has a low level of observability, its rate of adoption is quite sluggish.

According to Rogers (2003), he argues that implementation is a decision of full use of an innovation as the best course of action available whereas rejection is a decision not to adopt an innovation. Rogers explains the term diffusion as the process in which an innovation is communicated through certain channels over time among the members of a social system. As expressed in this definition, innovation, communication channels, time, and social system are the four key components of the diffusion of innovations.

The first element of the diffusion of innovations process according to Rogers, an innovation is a thought, practice, or project that is perceived as new by an individual or other unit of adoption (Rogers, 2003). An innovation may have been invented a long time ago, but if individuals perceive it as new, then it may still be an innovation for them. The newness characteristic of an adoption is more related to the three steps (knowledge, persuasion, and decision) of the innovation-decision progression that will be discussed afterward. Besides, Rogers claimed that there is a lack of diffusion research on technology clusters. According to Everett Rogers (2003) he asserts that technology cluster consists of one or more noticeable elements of technology that are perceived as being closely interrelated.

Uncertainty is an imperative impediment to the adoption of innovations. An innovation's consequences may create uncertainty, for Rogers (2003) he argues that consequences are the changes that crop up in an individual or a social system due to the adoption or rejection of an innovation. To shrink the uncertainty of adopting the innovation, individuals should be informed about its merits and demerits to make them aware of all its consequences. Further, Rogers claimed that consequences can be classified as pleasing versus detrimental (functional or dysfunctional), direct versus indirect (immediate result or result of the immediate result), and predictable versus unpredictable (recognized and intended or not).

The second element of the diffusion of innovations process is dissemination channels. According to Rogers (2003), communication refers to a process in which participants create and share information with one another in order to reach a mutual understanding. This dissemination occurs through channels between sources. Rogers states that a source is an individual or an institution that originates a message. A channel is the means by which a message gets from the source to the receiver. Rogers states that diffusion is a particular kind of communication and constitutes these communication elements: an innovation, multiple units of adoption, and a communication channel.

The persuasion phase happens when the individual has a pessimistic or optimistic attitude toward the innovation, but the formation of a favorable or unfavorable attitude toward an innovation does not all the time lead directly or indirectly to an adoption or rejection" (Rogers, 2003). The individual shapes his or her attitude after he or she knows about the innovation, so the persuasion stage follows the knowledge stage in the innovation-decision process.

Furthermore, Rogers states that while the knowledge phase is more cognitive- (or knowing-) centered, the persuasion stage is more affective- (or feeling-) centered. Thus, the individual is involved more sensitively with the innovation at the persuasion stage. The degree of uncertainty about the innovation's functioning and the social strengthening from others including but not limited to colleagues, peers among others affect the individual's opinions and beliefs about the innovation.

At the decision phase in the innovation-decision progression, the individual decides to implement or reject the innovation. Whereas adoption refers to the full use of an innovation as

the best course of action available, rejection means not to implement an innovation (Rogers, 2003). If an innovation has a partial trial basis, it is usually adopted more quickly, since most individuals first want to try the innovation in their own situation and then come to an implementation decision. The explicit trial can speed up the innovation-decision process. However, rejection is possible in every phase of the innovation-decision process. Rogers expressed two types of rejection: active rejection and passive rejection. In an active rejection circumstances, an individual tries an innovation and thinks about adopting it, but later he or she decides not to adopt it. In a passive rejection (or non-adoption) situation, the individual does not think about adopting the innovation at all.

An innovation is put into practice, which is at the implementation phase. On the other hand, an innovation brings the newness in which some degree of uncertainty is involved in diffusion. Indecision about the result of the innovation still can be a predicament at this step. As a consequence, the implementer may need technical assistance from change agents and others to diminish the degree of uncertainty about the consequences. Furthermore, the innovation-decision process will end, since the innovation loses its distinctive quality as the separate identity of the new idea disappears (Rogers, 2003).

This research borrows heavily from the third (decision) and fourth (implementation) steps in the Diffusion of Innovation theory. With the employment of the ERP systems in the management of public universities in Kenya interpreted as an innovative line of attack in the study, diverse institutions are assumed to have undergone the first, second, and third processes in the diffusion of innovations theory as advanced by Rogers (2009). These include gathering knowledge about the ERP systems, persuading stakeholders to support the selected systems in automating their institutional operations and making the decision to implement the systems. While guided by the diffusion of innovations theory, the researcher sought to establish the user involvement experiences during the implementation phase of the ERP systems in public universities.

Kisii university being one of the public universities in Kenya, it has not been left behind too in the implementation and with sufficient involvement of users in the implementation of the ERP system it can substantially improve its performance.

C. Information Systems Success Model

Further, this research besides employing Diffusion of Innovation Theory, it also engaged Information Systems Success Model. This research employed Information Systems Success model. The information systems success model as highly developed by DeLone and McLean (2009) is based on earlier research in communications by Shannon and Weaver as well Mason's theory on Information Influence. As highlighted in the model, three key pillars of information systems success are advanced. These embrace System Quality, Information Quality and Service Quality. The original D&M Information System Success Model was subsequently sophisticated to include net benefits as a gauge of success (Delone & Mclean, 2014). Figure 2.1 shows the information system success model.

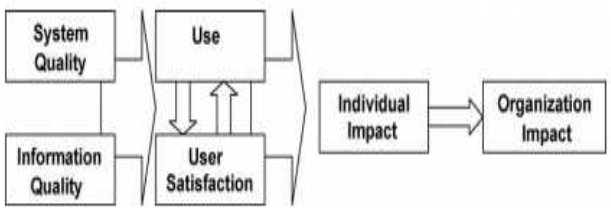

Figure1: IS Success Model (DeLone & McLean, 1992)

The theoretical model makes use of a causal relationship to scrutinize the success of the implementation of information systems in public universities. Information Systems Success Model as revised by DeLone and McLean constitutes of six interrelated dimensions which influence success in implementation of an information system. These include information quality, system quality and service quality as independent factors. These influence the intention to use, user satisfaction and net benefits derived from implementation of an information system According to the model, an information system such as an enterprise resource planning system can be examined in terms of information, system and service quality. These subsequently determine system use, intended use, target user satisfaction and net benefits from deployment of the system. Net benefits realized from the use of the ERP system can be of either positive or negative influence on satisfaction of the users. Benefits from implementation of an enterprise resource planning system aid to find out the feasibility of the implemented system (DeLone & McLean, 2009).

The information systems success model was useful in studying integrated institutional management information systems and their usage in public universities in Kenya. By using the model, the objectives of the research study were best addressed to ascertain not only challenges but also both user involvement and user factors in deployment of these systems in the management of public universities.

III. EMPIRICAL LITERATURE REVIEW

Shehab *et al.* (2004), note out that although organizations spend millions on ERP packages and implementation process, there is widespread evidence that they experience substantial problems, particularly during the concrete implementation. Diverse challenges that organizations commonly faced during the ERP implementation had been addressed in the past research (Spitze, 2001; Thavapragasam, 2003). A study done in New Zealand by Leon (2008) mentioned that 69%, 28% and 13% failure rate of the ERP systems due to people, process and technological troubles in that order. It reveals that people problems are more critical as opposed to the rest ones.

A. Conflicts between User Department

Sufficient functional coordination is taken as one key challenges faced by organizations, as lack of synchronization amongst different business units and stakeholders is often enlisted as one of the factors leading to implementation delays and organizational conflicts, eventually leading to implementation failure (Kim *et al.*, 2005). Conflict of interest between different functional units and a lack of resource commitment are highlighted as vital challenges associated to the ERP system implementation failure (Kim *et*

al., 2005). Institutional processes must be compactly integrated, jobs redesigned and new procedures created throughout the institution.

The complete process of change is demanding and employees are often unprepared for new procedures and roles (Rishi & Goyal, 2008; Laudon & Laudon, 2006, 2000). Also, there is an issue of information sharing, which may contradict existing practices and culture (O'Brien, 1997). Coleman (n.d.) captures the key problems in his piece of writing "ERP incorporation options". The problem of integrating the ERP applications is as old as ERP itself. Not long after the ERP suites first debuted in the early 1990s touted panaceas for corporate integration woes companies have struggled to improve the level of integration between their ERP packages and other applications such as legacy systems and institutional sites.

B. Attempts to Build Bridges to Legacy Systems

Strategies aiming to surmount this perceived drawback either opt to maintain use of the legacy solution, system configuration to integrate add-on modules to the original ERP solution (Kumar *et al*., 2003). Berente *et al.* (2009) puts it that integration of existing stand-alone information systems with ERP systems is a major challenge for many organizations. This is further complicated by the fact that ERP systems also seek to integrate business processes in organizations which were previously functional-based.

Thus, the process-orientation resulting from operational integration is against the functional differentiation which is common in traditional organizations. While client/server and open systems solve some technical difficulties, there are still troubles of integrating different types of data and procedures used by functional areas.

C. Inadequate Effective Project Management Methodology

Laudon and Laudon (2006), asserts that most managers are skilled to manage a product line, a division, or an office. Their argument is substantiated by Rishi and Goyal (2008). They are hardly trained to optimize the performance of the organization as holistic as possible. However, Bingi *et al.* (2002) argues that the enterprise resource planning systems require managers to take a much larger view of their own actions, to include other products, divisions, departments and even outside business firms.

The literature study robustly suggests that transformation is an unavoidable consequence of implementing various projects (Hornstein, 2014; Serra & Kunc, 2014). A project is an impermanent and unique group of activities with the commencement and ending time clearly mapped out and designed to realize defined goals (PMI, 2013). Although project management (PM) and change management are derived from different terminologies and different methodologies (Hornstein, 2014), they are, nevertheless, tightly associated and co-dependent. They also emphasize different sets of skills and competencies (Crawford, & Hassner-Nahmias, 2010).

According to the Project Management Institute (PMI), project management is the application of knowledge, skills, tools, and techniques to project activities to satiate project requirements. It is accomplished through the application and integration of project management processes such as initiating, planning, executing, monitoring, controlling and closing (PMI, 2013).

D. Misunderstanding of Change Requirements

As cited by Umble *et al.* (2009), ERP system implementation is not just a software project but an institutional change project. The projects call for co-operation, teamwork, and planning for organizational change are difficult to do when top management is too busy to give the project satisfactory attention.

Wagner *et al.* (2006) further alludes that installing ERP systems successfully is not an easy task because of the key changes to an institution's business processes required by ERP software. The projects bring about enormous organizational changes as they consist of many functional modules that can span the entire organization and yet share a common database. Because departments are part of a larger organization, they are obligatory to share systems and act not as independent units but as a larger organization, requiring a whole new understanding of their work (O'Brien, 1997).

Change management is required in separately functional areas, where the systems are to be applied, such as human resources, training department and the programme management office (Journal of Information Technology, 2009). Changes must be efficiently planned, scheduled, carried out, and documented, in order to minimize the cost and disruption during the implementation process (Van Tonder, 2004).

Identifying and communicating the reasons for the change. Problems or opportunities requiring the changes are demonstrated clearly through analysis and practical examples and a shared feeling of necessity of changes is created (Salminen, 2000). A well-communicated shared understanding of the need for change was found to be one of the topmost success factors in the ERP implementation context in Australian practitioners' understanding (Hawking et al, 2005).

In Kenya, the prior studies on change management did not concentrate on the specific contextual characteristics of public organizations (Kuipers *et al*., 2014).However, an interesting change management in public organizations has been noted (Fernandez & Pitts, 2007; Fernandez &Rainey, 2006).

Recent studies have questioned the fact that change management techniques for the private sector are applicable in the public organization context and have suggested that the differences between the public and private sector could play a significant role in this respect (Boyne, 2006; Karp & Helgo, 2008; Kickert, 2013; Klarner *et al*, 2008; Rusaw, 2007).

A recent literature review of research on change management in the public universities sector by Kuipers *et al*. (2014) found that most studies emphasize the content and context of change, instead of the implementation process. Ubiquitous information systems and implementation of various kinds of changes related with information systems adoption have become a challenge for public organizations (Jääskeläinen & Sillanpää, 2013). However, the processes through which the change in public organizations comes about are not described in detail in the literature (Kickert, 2010; Kuipers et al., 2014).

A project promoter, as a responsibility, is particularly handy in the early phases and during implementation phase (Aloini *et al.*, 2007).

In some cases, the project champion role is vital for marketing the project throughout the organization (Al-Mudimigh, 2007). The leader/leaders of change are committed to the change, active, enthusiastic, inspires others to believe in and act on the change through their behavior. Leadership can be extended to the functional organization by recruiting and training change coaches across the organization.

A. *Failure to Redesign Business Process*

Implementing an ERP system entails business process reengineering to ensure standardization and optimization of an organization's business processes in an attempt to obtain maximum benefits through the use of the embedded best practices of the ERP solution (Bingi *et al*., 1999; Davenport *et al*., 2004). Nonetheless, a lack of business process reengineering is also considered as a CFF (Amid *et al*, 2012; Hawari & Heeks, 2010; Umble *et al*., 2003; Wong *et al*., 2005).

Whereas an organization may even prefer to reengineer its processes completely to adapt to the new best practice standard as embedded by the ERP system (Kumar *et al*., 2003), the underlying complexity is that the proposed solution will not match the whole organizational needs (Davenport, 1998). The reality is that an ERP solution may lack key functionalities which are needed to connect all the required business processes of an enterprise (Kim *et al*., 2005; Kumar *et al*., 2003).

As such organizations face different problems with ERP that customized system development owing to the need to change their organizational practices in order to fit the software `unsurpassed practices' (Davenport, 1998; Pollock & Conford, 2004; Wagner & Newell, 2004; Light, 2005b; Chiasson & Green, 2007).ERP systems thus incorporate values and practices that may not essentially match all environments.

B. *Composition of Project Team Members*

Consolidating a balanced, dedicated team comprising of the most experienced, most knowledgeable people from various functional units is paramount for a successful ERP implementation (Gargeya & Brady, 2005). An organization's inability to build the right team as a result of the shortage of required ERP knowledge that the assigned implementation team should possess is a noted significant human resource impediment.

Employees in a reasonable team should possess both technical expertise and business (Barker & Frolick, 2003; Chen *et al*., 2009; Gargeya & Brady, 2005; Kamhawi, 2008; Kim *et al*., 2005). In effect, organizations make an effort to recognize the different qualities and skills that are required and to successfully acquire and integrate the different skills set and knowledge of people throughout the ERP phases (Chan, 1999). As a result of management's failure to source critical IT skills due to the perceived lack of in-house skills, organizations have to increasingly rely on external consultants to fill in the experienced gap (Chen *et al*., 2009). Well, project team competence is ranked as one of the topmost CSFs by Somers and Nelson, (2004). Soja (2011) argues that a lack of personnel skills and knowledge is more repeatedly categorized as a critical challenge but seldom classified as a CSF. This is attributed to an organization's tendency to assume, de facto, that enough qualified resources will be allocated to the implementation project (Soja, 2011). The lack of accessibility and commitment of qualified resources during the different stages of an ERP implementation poses another major hitch to the organization (Somers & Nelson, 2001).

IV. METHODOLOGY

The researcher adopted a descriptive survey research design because it is used to obtain information concerning the current status of the phenomena to describe what exists with respect to the variables or conditions in a situation without changing the environment. The researcher targeted the ERP system users, employees Kisii University who were 300.The sample size for this study was 65 respondents of Kisii University derived using the Bartlett *et al*., 2001 table.

The study relied on both primary and secondary data sources. Primary data was gathered using structured questionnaires. In addition to the primary data, secondary data from journals and e-books were also used to provide more information to this study. The researcher used structured questionnaires which were designed carefully according to the objective of the study.

The collected data was analyzed by using descriptive statistics methods of mean and standard deviation. Then the results were presented in the form of a table below.

V. STUDY FINDINGS

The objective of this study was to find out the challenges encountered in implementing the enterprise resource planning system in public universities. The respondents were provided with questions revolving around the enterprise resource planning system implementation challenges namely lack of effective project management methodology, attempts to build bridges to legacy applications, conflicts between user departments, composition of project team members, failure to redesign business processes and misunderstanding of change requirements.

The respondents were required to provide their opinion based on the likert scale of: 1= Strongly Agree (SA), 2 = Agree (A), 3 = Not Sure (NS), 4 = Disagree (D) and 5 = Strongly Disagree (SD).

Table 1: ERP System Implementation Challenges

Statement	N	M	SD
Lack of effective project management methodology	65	2.09	1.011
Attempt to build bridges to legacy applications	65	2.45	0.791
Conflict between user departments	65	2.40	1.012
Composition of project team members	65	2.35	0.975
Failure to redesign business process	65	2.29	0.964
Misunderstanding of change requirements	65	2.25	1.076
Overall Results	**65**	**2.31**	**0.972**

The finding in table 1 showed that respondents agreed that lack of effective project management methodology was a

challenge in the implementation of the ERP systems (M=2.09;SD=1.011); attempt to build bridges to legacy applications (M=2.45; SD=.791); conflict between user departments (M=2.40; SD=1.012); composition of project teams members (M=2.35; SD=.975); failure to redesign business process (M=2.29; SD=.964); and misunderstanding of change requirements (M=2.25; SD=1.076).

The overall results revealed that respondents agreed (M=2.31; SD=0.972) that there were challenges facing the implementation of the ERP system in public universities in Kenya.

VI. DISCUSSION OF THE ERP SYSTEM IMPLEMENTATION CHALLENGES

The results of the study agreed with Kim *et al*., (2005) who established that lack of coordination amongst different business units and stakeholders is often cited as one of the factors leading to implementation delays and organizational conflicts, eventually leading to system implementation failure.

Further Kim *et al*., (2005) stated that conflict of interest between different functional units and a lack of resource commitment are highlighted as critical challenges linked to system implementation failure. Further, the study finding concurred with Rishi and Goyal (2008) who asserted that the process of change was challenging and employees are often unprepared for new procedures and roles.

In addition, the findings agreed with Berente *et al*. (2009) who argued that integration of existing stand-alone information systems with the ERP systems was a major problem for many organizations. This is further complicated by the fact that the ERP systems also seek to integrate business processes in organizations which were previously function-based. Thus, the process-orientation resulting from the process integration is against the functional differentiation which is common in traditional organizations. While client/server and open systems solve some technical difficulties, there are still problems of integrating different types of data and procedures used by functional areas.

Moreover, the finding agreed with Hornstein (2014) who said that project management (PM) and CM are derived from different terminologies and different methodologies they are, nevertheless, tightly linked and co-dependent and also emphasizes different sets of skills and competencies.

These findings implied that challenges are ever there and as such any organization might not avoid. The differences between the users' departments need to be resolved before the information systems are implemented because it will slow and hinder the successful implementation of the ERP systems. There are also needs for the project team members to work harmoniously and with common focus towards the success of the ERP implementation. Since change is inevitable, the management should ensure that they communicate promptly on the need of changing the technology in an organization. The redesigning of business process might also be a challenge; however, there was a necessity of carrying out feasibility study before adopting the new information systems.

VII. CONCLUSION

The study concluded that the ERP system implementations are faced by varied challenges which should be overcome to ensure smooth information systems implementation. Further the study recommended that, in as much as the university rolled out the implementation of the ERP system which is ongoing, it has not fully done so to realize its full value of the system and as such the university should consider the ERP system implementation challenges for they are fundamental for the success of the ERP system implementation in public universities.

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