Enterprise Resource Planning Deployment and Business Process Reengineering at a Major University: A Case Study

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ABSTRACT

Universities have deployed enterprise resource planning (ERP) systems to ease complexity and provide on-demand information. These systems also provide the opportunity to reengineer business processes to improve efficiency. However, these installations may not be as efficient or effective as expected. The use of ERP success factors provides a measure of these deployments that can overcome ineffectiveness in deploying an ERP system. This article looks at how well success factors impacted the deployment of an ERP system at a Maryland University.

KEYWORDS

BPR, Business Processing Reengineering, Change Management, Enterprise Resource Planning, ERP, PeopleSoft, Success Factors

INTRODUCTION

Using Enterprise Resource Planning (ERP) software is a common practice to integrate businesses’ processes into a centralized system. It can provide better capabilities than current legacy systems, improved responsiveness, and greater decision-making capability (Al-Mashari & Al-Mudimigh, 2003). ERP systems such as PeopleSoft (PS) can help universities and colleges better manage student populations and the support staff and faculty functions. A university-wide ERP system can integrate and optimize business processes (Motwani, Subramanian & Gopalakrishna, 2005). It can improve management of student registration, class management, funds management, and personnel management. Deploying an ERP today is considered a key issue for universities. This is because implementing a large system like ERP is complex and risky (Worley, Chatha, Weston, Aguirre & Grabot, 2005). Also, it can be a failure if certain practices are not followed or properly executed. Sun, Ni & Lam (2015) found this can happen if the implementation is in adequately planned or managed.

ERP systems can force an organization to rethink at their business processes and redesign new ones called Business Process Reengineering (BPR). That’s because ERP implementations are a processed driven activity and not a function-based activity (Hong & Kim, 2001; Kallinikos, 2004). They break down an organization in order to automate manual-based functions and provide information across multiple departments (Kallinikos, 2004). These projects are carried out usually with no knowledge of what to do and require the use of contractors to assist the college or university. Without prior knowledge of ERP deployment, universities will make many mistakes that cost the university or college time and resources. The use of identified success factors related to ERP and BPR can help a

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university or college prevent the unnecessary expenditure of resources. Remember it’s not how fast one implements or the amount of money one has but how prepared the institution is to implement the project (Schneiderjans & Kim, 2003). One has to understand that an ERP implementation can take five years or more to fully deploy.

**Significance and Relevance**

Many colleges and universities in Maryland looked to migrate to the PS ERP solution as part of a BPR effort. They also wanted to utilize the advances of information technology to redesign business processes into a more efficient and effective manner (Adahi, 2004). However, each school may have unique requirements for their institutions. It is a proven fact that many ERP deployments fail without proper planning and detailed analysis of the business requirements. Davenport, Harris and Cantrell (2004) indicated that “over 42 organizations surveyed had achieved little or no integration” with their ERP system (p.3). One thing that contributes to this is that specific problems and issues later arise after the system is installed (Berchet & Habchi, 2005). These can also happen during the different parts of the deployment. Also, the technology and manpower resources needed may not be adequately prescribed. Davenport, Harris and Cantrell (2004) also indicated a need for establishing a structure for business change to support ERP deployment.

The changes that an ERP project will go through can be overwhelming to a university causing it to fail (Ram, Corkindale & Wu, 2013). Doing a case study that investigates and describes what a major university went through will be useful to other universities considering a PS ERP deployment. Al-Mashari and Al-Mudimigh (2003) stated that BPR project failures can come from the lack of project ownership, communication, and change management. This becomes some of the factors used to measure the success of the ERP and BPR project. Therefore, organizations considering implementing an ERP system needs to be proactive and better prepared to handle the project demands. A successful ERP system can provide clear business intelligence across the whole university (Motwani, Subramanian & Gopalakrishna, 2005). Understanding what makes an ERP software system project fail is important to an organization considering deploying such a similar system.

**Setting the Stage**

The Maryland university of this research is a major university in Maryland. It provides education for over 22,000 students, staff and faculty to carry out this mission. In 2000, the University System of Maryland Vice Presidents for Administration voted to terminate continuing support of the current Student Administration Information Systems. The group approved the migration to PS suite of administrative information systems to all its universities. This was to replace the outdated 1988 Student Information System (SIS), Human Resources System (HRS), Financial Resource System, and Financial Aid Plus (FAMPLUS).

**METHODOLOGY**

The project involved research and reporting on the deployment of PS ERP at the university. A review was done on the primary functional, technical, and managerial areas involved with the project. This included the functional areas, the information technology side, and leadership from the management side of both areas. Amoako-Gyampah (2004) supported the fact that both users and managers perspective be part of any study to get both sides of the story. Also, research of project papers and notes was done to identify additional data and facts related to project implementation. Lastly, research into best business practices and published literature helped to identify success factors. Vendors and consulting firms highly recommend the universally adopted best practices for implementing an ERP system (Hong & Kim, 2001).

Case study methodology with business process re-engineering ideas was used in this study. This helped to better understand the success and failures of the ERP deployment (Motwani, Subramanian
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