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ERP System in Higher Education: Prospects and Challenges

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Abstract - The present paper is an attempt to find out different implantation challenges and issues of an ERP system in higher education sector. This paper also foretastes the conceptual framework of an ERP system in higher education institutions (HEI) after reviewing the earlier available literature. The study observed that the universities and colleges lacked readiness to move into such a critical, time consuming initiatives. The universities and colleges are under pressure to reduced government funding meanwhile meet the expectations of students and parents to deliver ever higher quality services at lower costs. The study suggest that proper implantation of ERP systems can help university leaders to better face these challenges by aligning their business processes and providing essential information to facilitate timely more-informed decision making and one should properly select an ERP system as per the internal and external environment of the institute.

Keywords: ***ERP, Education, HEI's, System***

I. INTRODUCTION

The term Enterprise Resource Planning (ERP) derived from the industry for integrated, multi-modules application software packages that are aimed to serve and intensify multiple business functions. ERP system can comprise software for manufacturing, order entry, general ledger, accounts receivable and payable, purchasing, warehousing, transportation and human resources. As a result of developing out of the manufacturing industry, ERP entails the use of packaged software rather than proprietary software written by or for one customer. ERP modules may have the ability to interface with of an organization's own software with changing degrees of effort, and, relying on the software, ERP modules may be alterable via the vendor's own proprietary tools as well as proprietary or standard programming languages (Soliman and Karia,2015).

Over the period ERP systems has gained an increased significance in companies throughout the world. The main part of the mid and large-sized companies has already implemented an ERP system and a homogenous number of companies are look ahead to conduct an execution project in the nearest future. Industry and academia alike has put a lot of resources into researching and documenting the complex process it is for a company to implement an ERP system. This focus was a natural consequence of the many implementation projects gone awry in the nineties. Research has resulted in several practical models to minimize the risks during the implementation process and thereby increase the chance of a successful implementation. Examples of these models are e.g. the Critical Success Factor models, which identifies different areas of an ERP-implementation project, where certain criteria must be met to attain success in the implementation Endeavour (Markus et. al., 2003).

Gradually, as the majority of bigger companies and a significant share of mid-sized companies have implemented an ERP system, research focus is beginning to shift to the phases succeeding the implementation and stabilization phases. Among the issues facing the companies now is the need to educate employees to be able to handle the problems following increasingly pervasive role of ERP systems in organizations. Traditionally this need for education with regard to ERP has been satisfied internally by the ERP-implementing companies with help from external consultants and often in close-operation with the supplier of the ERP system. Several universities throughout the world have taken up ERP as a field of study, with respect to both the scientific research conducted and the curricula taught. During recent years, university courses on Masters level dedicated solely to ERP systems has emerged. The indication that ERP is no longer considered merely a side-branch of existing research fields, but is recognized as a separate field of study raises important questions with regards to the content and composition of the courses dedicated to ERP.

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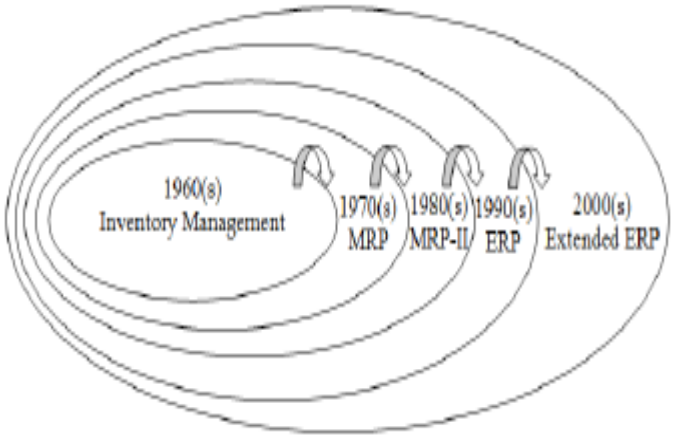
The present study tried to find out the general overview of an ERP system in higher education with the help of reviewing earlier available literature. we review those studies which were explaining positive and negative aspect of an ERP system in the field of higher education.

II. EVALUATION OF THE ERP SYSTEM

The Enterprise resource planning systems (ERP) pass through different stage of cycles since its beginning in 1970s (refer figure 1). During 1960s, the manufacturing system was introduced for the inventory management of the firms. In 1970s the concept of material requirement planning (MRP) were introduced which were the most basic computerized information systems of that time.

Figure 1: Indicates the Evolution of ERP System



Source: Nizamani *et al.* (2013)

In 1980s the second phase of MRP system were launched and known as Manufacturing Resources Planning (MRP II). The MRP was advanced version which were used for organizing manufacturing processes and distribution management activities. Whereas, in 1990s the MRP-II were using in business, engineering, finance, project management and human resource management and this extensive use of MRP-II further known as the ERP.

In present days, the new generation of ERP is introduced which is commonly known as extended ERP system. These systems are more advanced and more efficient in processing of order processing, procurement, sales, human resources, manufacturing, finance, accounting, sales, operations planning, customer relationship management, materials management and inventory management (Nizamani *et al.* 2013).

In literature, many authors have defined enterprise resource planning in different ways as shown in following table:

Author(s)	Observation(s)
Yen *et al.* (2002)	ERP system is adaptable to enterprise changing needs.
Davenport (1998),	ERP is extensive software that comprised of multiple configurable modules integrated in a single system.
Shanks (2000) and Kumar *et al.* (2000)	A single data set used in all of the company's internal business processes
Nizamani *et al.* (2013)	ERP systems support the online communication with the environment outside the boundary of the company and should not only be limited to the boundaries of the company.
Source: Author's observations from earlier literature	

III. ERP IN HIGHER EDUCATION

The ERP system generally operates in more financially competitive corporate environment, have experienced numerous benefit from ERP system during the last two decades. Thus, these kinds of successes in the corporate sector have encouraged higher education institutions to adopt ERP systems with the same goals like increasing operational efficiency and decreasing costs.

In the words of McCredie and Updegrove (1999) Enterprise Resource Planning Systems are software packages that provide the complete integration of information of various functional processes (departments) within an organization. The Universities has transmuted their systems to ERP systems to abut the changing environment's needs. *Kvavik et al.* (2002) in their study observed that the legacy and other information systems are replaced or integrated with ERP system in various universities throughout the world to achieve greater efficiency and improved end-user efficiency.

Further Garcia-Sanchez and Pe´rez-Bernal (2007) found that the ERP system integrate with all organizational resources and shared benefits are distributed to all departments. Furthermore, ALdayel *et al.* (2011) examine that an ERP systems were being recognized as a solution to integrate academic and administrative services of universities.

Challenges of ERP in Higher Education Institution (HEI)

Besides, positive effect of an ERP system, have encountered some challenges during implementing in higher education. We are going to review those studies in this section of the study. In higher education sector there are diverse forms of management hierarchy from institution to institution especially in case of universities.

In the words of Birnbaum and Edelson (1989), *"There exist two sources of authorities within a university: administrative authority and academic authority. ERP implementation is believed to reinforce administrative authority as a model of governance. For academics, this may lead to fear that use of a new system that results in increased transparency of their transactions would result in a loss of control. On the other hand, administrative staff may fear for their job security when redundant processes*

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are eliminated work functions are automated across a university".

Furthermore, Pollock and Cornford (2005) argue that implementation of an ERP system of corporate industry in HEI's could be a high risk strategy and HEI's needs for unique business functions, ERP solutions limit their choices and encourage adopting a "generic solution". We summarized the opinions of different authors in following table:

Author(s)	Observation(s)
Tsichritzis (1999)	ERP system forced the universities to admit that"education is a business and students are the customers".
Newman and Similä (2000)	ERP software, which incorporates best practices from the corporate business industry, is not appropriate for universities, since universities have unique structures and decision-making processes.
Allen, Kern & Havenhand, (2002)	ERP implementation encourages universities take a more business-like approach to education, resulting in cultural changes including "the use of managerial language and techniques.
Pollock & Cornford (2005)	ERP systems are "large integrated packaged solutions" with dynamic complexity, it may cause difficulties with implementation for management and IT staff in universities, even those who might have comprehensive understanding of their own organizations
Source: Author's observations from earlier literature	

Thus, ERP system has lacking above mention key features during implementations in education sector especially in colleges and universities.

IV. Conclusion and Suggestions

In this paper a conceptual framework is proposed to establish the most important factors to research for implementing an ERP system in higher education institutions (HEI) after reviewing the literature on the existing frameworks and existing models. We observed that the implementation of ERP system encountered with many challenges and issues like lack of readiness of the universities and colleges community to move into such a critical, time consuming initiatives and dissimilarity of internal as well as work environment in HEI's, etc. The universities and colleges are under pressure to reduced government funding meanwhile meet the expectations of students and parents to deliver ever higher quality services at lower costs. The proper implantation of ERP systems can help university leaders to better face these challenges by aligning their business processes and providing essential information to facilitate timely more-informed decision making. To overcome such challenges and issues one should properly select an ERP system and organizations should conduct an internal audit of all of their existing processes and policies to best understand the requirements for the ERP System.

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