

# Challenges of ERP Systems in Educational Institution

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## Abstract

Enterprise Resource Planning (ERP) systems were initially designed only for the business and organization fields to manage business and automate office functions related to technology, services, accounting and human resources. ERP systems are now attempting to cover all basic functions of an enterprise, regardless of the organization's business or character. The penetration of this system in educational institutions have led to the rise of many challenges. These challenges arise since the adoption of an ERP system in an educational institution is not always successful. The outcome of this paper contributes to the understanding of the typical challenges in ERP implementation between corporate and educational institution.

**Keywords:** Enterprise resource planning system, educational institution, challenges

## I. INTRODUCTION

Enterprise resource planning is a software solution used by organisations to manage and integrate the essential parts of the business. In other words, enterprise resource planning is the process of delivering various aspects that are essential to running a business, including production management, transportation management systems (TMSs), business intelligence (BI), human resources, accounting, customer relationship management (CRM) and e-business. Today the available ERP options have provided organisations with modules to integrate their requirements using a common interface and one common communication language. In the last decade, majority of the enterprise systems have invested in large amount, all of which were intended to improve record keeping, security, data accuracy, and streamline operations [3]. Although the "e" in ERP stands for "enterprise," high-growth as well as mid-size and small-size companies are now rapidly shifting to the adoption of ERP systems. Software-as-a-Service (SaaS) solutions which is also referred to as "cloud computing" have aided in the rapid growth of ERP systems. The penetration of cloud-based solutions not only can make ERP software more affordable but also, they can make these systems simpler to integrate and control. Cloud ERP enables business intelligence and real-time reporting, making them even valuable to executives and staff seeking visibility into the business.

The advancement of knowledge and technology have brought new competitive landscape for the educational institution domain to meet global customer requirements on quality and performance. These have encouraged educational institutes to improve the quality of their services and innovation by implementing ERP system which in turn improves their performance and efficiency [6], [7], [8]. The ERP system has been implemented to replace the existing administration and management related computer systems [6], in order to increase the performance of the end users by providing better managerial tools to enhance levels of efficiency and performance [7]. Thus, an ERP system is an important part in integrating information of an organization for the service operations of educational institutions.

The ERP system is not only an automation of an organisation's business processes but also an opportunity for an organisation's business processes to be re-engineered which aims for an organisation's growth in the long-term. A system of ERP provides a number of advantages which includes the capacity for better data analysis, improved levels of organisational performance and efficiency due to enhanced processes that improves levels of customer service. Thus, the ERP system has emerged and enhanced the level of productivity and accessibility as well as improved organization's efficiency [9]. These advantages of the ERP system provide benefits and values to organisations and enable organisations to be more competitive in the market. Even though universities have invested a good amount of resources, the ERP system still fails to deliver its expected outcomes. It is therefore a robust desire by researchers to examine and explicate the causal factors that underpin proper outcome when a system of ERP is applied [10].

## II. A BRIEF HISTORY OF ERP SYSTEMS

The term ERP was coined in the 1990s by Gartner, but its origin started in the 1960s. During that time, the concept applied to inventory management system and control in the manufacturing domain. Engineers created programs to monitor inventory, as well as other aspects and report on status. During 1970s, this had evolved into Material Requirements Planning (MRP) systems for scheduling production processes.

In the 1980s, MRP started covering more manufacturing processes, prompting many to call it MRP-II or Manufacturing Resource Planning. During 1990, these systems had expanded beyond inventory control system and other back-office functions like accounting and human resources, resulting to the penetration of ERP as we've come to know it.

## III. ERP IN THE EDUCATIONAL INSTITUTION

The advancement of technology has led to the implementation of enterprise resource planning systems not only in business organisations, but also in educational institutions. Apart from various new learning techniques like online courses and smart classrooms, technology has also simplified the management of educational institutions. The implementation of ERP systems in educational institutions has been revolutionizing institutional management, helping institutions to improve their operations, thus making them manageable and more effective [11]. It is the time and efficiency factor that makes the software much more reliable than the traditional methods. Managing funds in an institution and then tracking them into a report involves a lot of time and effort if done manually. A lot of productive time is wasted to meet this kind of specific requirements. The management of a lot of basic operations like inventory, human resource, finance and other services at times becomes complex and tedious. The implementation of an ERP system in an educational institution can ensure that the functions of an institution can reach its maximum potential.

Educational Institution is a sector that have unique organizational models and core processes as well as objectives compared to other business. It supports the academic activities including some basic process such as scheduling, learning process, performance indicators, and examination process. Based on studies it has been identified that there are many similarities between implementing ERP system software in educational institutes and in other organizations [12]. It is therefore important to study the benefits of using ERP systems in higher education and the necessary information required to avoid the problems caused by older systems, in order to adopt the usage of ERP in the changing educational institutions.

## IV. CHALLENGES OF ERP SYSTEMS IN EDUCATIONAL INSTITUTIONS

Heiskanen, Newman and Similä, (2000) states that ERP software, which implements best practices from the corporate business industry, is not appropriate for educational institutions, since they have unique structures and decision-making processes. Educational institution culture heavily affects ERP implementation [2].

Today's universities have been made to admit that "education is a business and students are the customers" [13]. ERP implementation in educational institutions is a business-like approach to education which results in cultural changes including "the use of managerial language and techniques" [14]. There can be resistance to ERP implementation at universities because it involves not merely the implementation of a new information system, but a drastic change in organizational culture.

Due to poor ERP selection and evaluation process, ERP software can be found to be ill-fitting with the business requirements. Some of the major causes of gap between the available ERP solutions and requirements (causes of failures) in higher education are as under [6].

### **A. Lack of proper quality of Business Process Reengineering (BPR):**

Project team members face difficulty in combining and contributing to BPR, and the lack of proper quality of BPR leads to incorrect system configuration issues. There can be a possibility that some of the project team members have a poor understanding of why or how to conduct BPR as their consultants might have provided unprofessional advice to conduct BPR. If the business processes are not properly reengineered to fit with the ERP systems, and the project team is not ready for the implementation of new business processes, they will not have the mindset for implementing or using the ERP system.

### **B. Lack of Proper Knowledge Transfer:**

The knowledge and capability of transferring required knowledge between the project team members have been identified as a major part of a successful ERP implementation in an educational institution. ERP implementation requires knowledge from implementation consultants. The knowledge of system functionalities and the knowledge of existing processes are among the important knowledge elements for a successful ERP implementation in an educational institution. The knowledge exists at many levels and it's transferred from individual level to teams, departments and divisions. At the start of a project, implementation consultants possess ERP package related knowledge and users have knowledge related to the processes in the institution. Efficient implementation requires end users to learn ERP package knowledge from the consultants. Consultants without proper experience who are not aware of the importance of the ERP system and try to practice during training sessions will fail to deliver professional ERP training to the users.

**C. Lack of Effectiveness of Project Management:**

The importance of the project manager, who is in charge of the management of the project, is to efficiently manage the consultants in evaluating their communication and training performance, when conducting Business Process Reengineering, and when testing the system performance. If the project manager has limited ERP knowledge, capability and poor project management skills to integrate the ERP system, the ERP project will be challenging and demanding, as it involves managing various systems, people as well as re-designing business processes.

**D. Overdependence on Heavy Customization:**

While implementing ERP systems there will be an issue of software mismatch. To overcome this issue, heavy customization will be required in the field of program customization. These customizations could cause project delays, overspent budget and an unreliable system. In order to customize the ERP system to fit with specific business requirements might lead to sacrificing "best practices" integrated in the ERP system.

**E. High Attrition Rate of Project Team Members:**

In most educational institutions with the governmental payroll, if the project team members experience high work stress and workload during the implementation of the ERP system, some of the members may resign from their job, which means insufficient ERP knowledge and lack of proper skill transfer among project teams during the ERP implementation life cycle. In the end, end users as well as project team members will not have required ERP knowledge for performing their daily tasks when using the ERP system.

**F. Lack of Proper IT Infrastructure:**

Any educational institution that is planning to implement an ERP system must be having at least a basic level infrastructure in place. This includes the communication process of the institution for example even the internal e-mail system is included in the base information technology infrastructure. The inventory management and the human resource management are examples of the base level information technology infrastructure of an educational institution. The lack of proper IT infrastructure in an educational institution will lead to a slow processing capability of the ERP system. If the top management of the institution has provided insufficient financial resource for the implementation of the ERP system, then a low performance IT infrastructure hardware will be proposed by the consultants and project manager to reduce the costs of ERP implementation effectively. Thus, the lack of proper ERP system integration will result in the manual transfer of data that is exchanged between the current infrastructure and the ERP system. This process of manually exchanging data creates issues if the data is not being properly exchanged between the two solutions. Manipulation or loss of data at the time of export would mean that a lot of complications would arise and the institution may even have to suffer a lot of losses.

**G. Lack of Proper Quality of Testing:**

The ERP testing result indicated that the ERP system is ready to go live or not. It results in many minor software bugs that are eventually discovered. Lack of proper testing leads to less software knowledge for the project team members since testing is a major part of learning. A team that does not understand the software is a group of poorly trained end users which leads to the failure of the ERP implementation. As soon as the system is live, lack of user knowledge creates as much confusion within the organization as software bugs.

**H. Poor Top Management Support:**

Limited support by top management will result to a rushed ERP implementation process, project team members will be overloaded and high staff attrition rate, ineffective knowledge transfer, delay in operations, ineffective decisions and political problems will occur. Thus, it necessary for the top management to provide sufficient support for the proper implementation of an ERP system otherwise it will give rise to issues in the implementation process.

**I. Irrelevant Expectations from Top Management Concerning the ERP System:**

If the top management assumes that the implemented ERP system will be providing great solutions without considering the complexity of the ERP system, the entire team will have high expectations from the system. This misconception will lead to irrelevant project planning and an underestimation of budget and resource allocation which will result in failure of ERP implementation.

## V. CONCLUSIONS

Overall this paper states the various challenges in implementing an ERP system in an educational institution. The current ERP system used for business have different set of functionalities that is significantly different from the academic functionalities required for educational institutions. ERP system for educational institutions should be customised specifically to address the academic functionalities. The ERP roadmap for educational institution has many challenges which needs to be overcome in order to implement an ERP system successfully. This road map can achieve better management and operations in educational institutions.

It will also represent the requirements of the institutions for the ERP vendors to modify the existing ERP system according to the institutional requirements.

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