Enterprise Resource Planning (ERP) Implementation in Technical Educational Institutes: Prospects and Challenges

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Abstract:
With growing demand of paperless office and transparent business operations, digitization of business processes becomes need of the hour. Starting with manufacturing industries, the digitization has penetrated into the Technical Educational Institutes also. Not only digitization but integration of all the processes has become important for any Institute. Enterprise Resource Planning (ERP) helps Institutes to digitize its all processes and integrate it too. On the basis of intensive interviews with ERP vendors and few case studies of Technical Educational Institutes Maharashtra State (India), this paper presents the research findings of prospects and challenges of ERP implementation in front of Technical Educational Institutes (TEIs).

Keywords: Technical Educational Institutes (TEIs), Enterprise Resource Planning (ERP), Information Communication and Technology (ICT)

Introduction: The prime objective of ERP is to increase operating efficiency by improving business processes and decreasing costs (Nah, Lau, & Kuang 2001; Beheshti 2006). ERP integrates various processes with diverse needs to communicate with each other by sharing the same information in a single system. ERP thus increases cooperation and interaction between all business processes in an organization on this basis (Harrison, 2004).

We live in such an age where ICT becomes integral part of our life. The TEIs are using standalone systems for its various processes. Accounts, Library and Admissions processes are leading in digitization. With increase in the opportunities of managing business processes with ease and to improve efficiency forced the TEIs to think about implementation of ERP systems. An increasing number of TEIs and competition introduced ERP systems to manage their operations more transparently.

The authors in this paper have presented the prospects and challenges in front of TEIs about the benefits provided and challenges observed in implementation of ERP. The authors have presented this issue on the basis of discussions with the ERP vendors and few case studies of TEIs who have implemented ERP in their organization.

An overview of ERP: Enterprise Resource Planning (ERP) is an information system which integrates various business processes together to manage organizations resources. It automates most of the enterprise wide business processes or functions. It provides an integrated package of IT applications to support business operations. The ERP systems are software packages that are composed of various modules which integrate business management and administrative functions including HR, Finance, Store, Purchase, Accounts etc. The ERP systems therefore involves both business and IT managers who work together to define new operational and managerial processes.

The concept of ERP began in the form of Materials Requirement Planning (MRP) in 1960’s. The first ERP system was developed in 1972 by former IBM
employees who founded the company SAP for producing integrated business solutions. The main advantage of ERP system is that it integrates the entire organization. Apart from this, it can be integrated with other technologies like e-commerce, BPR, SCM, CRM, OLAP etc. The proper implementation of ERP improves the efficiency of an organization. Due to the benefits it provides most of the Fortune 500 companies have successfully implemented ERP system. During its inception period the system had been developed considering only manufacturing sector but now its need for every organization in almost every sector.

Technical Educational in India: Technical education in India has been started way back in mid 19th century, but it got momentum in 20th century. An advisory body named AICTE was formed in 1945 to look after the matters relating to the technical education in India. In 1964, a commission was formed under chairmanship of Dr. D. S. Kothari for development of educational system in India. On the basis of the recommendations of the committee, the House of Parliament of India passed an act in 1987. The act is known as The All India Council for Technical Education Act by which AICTE became statutory body for proper planning and co-ordinate development of technical education system throughout the country. Technical education was defined as programmes of education, research and training in engineering, technology, architecture, town planning, management, pharmacy and applied arts and crafts and such other programmes or areas as the Central Government may, in consultation with the Council, by notification in the official Gazette, declare. The Act also laid down the powers, functions and structure of the AICTE.

The Technical Institutions runs following programmes.

Under-Graduate Programs
1. Engineering
2. Pharmacy
3. Architecture
4. HMCT

Post Graduate Programs
1. Management
2. MCA
3. Engineering & Technology
4. Pharmacy
5. Architecture & Town Planning

ERP and Technical Educational Institutes: In the recent past the ERP vendors are slowly capturing the untapped market. One of the untapped markets is educational sector. The ERP system has become an important element in any technical institution as it tightly integrates all departments and functions with centralized database and these systems are responsible for rendering services to its stakeholders, academic operations, and administration. These ERP systems are more responsive and more customers focused. Many TEIs have implemented ERP systems to manage their resources and maximize the benefits from the usage of the ERP systems from the point of view of the organization. The best feature of ERP is flexibility. It can be easily customized and modified according to the customers’ requirement and needs. It is very important to identify how flexible the ERP system is to adopt the required changes? In educational sector the ERP systems existence is dependent on training of staff and user involvement.

Many TEIs want to take advantages of ERP systems. They want to invest heavy amount in ERP projects that may go in for 2-3 years to implement. The investment in ERP systems represents one of the biggest investments in ICT for TEIs. The main objective of ERP systems implementation is the information connection and sharing of all the departments in a typical enterprise. In the nineties, the
implementation of ERP systems extended from supporting manufacturing activity to processes like orders, finance, and human resource management. Later, these systems have been offered support for marketing, e-commerce, CRM, student systems and supply chain systems. These are not become accustomed to support the processes of TEIs. ERP systems are required for TEIs to support its key administrative and academic services. The heart of such a system generally supports student administration (admission procedures and enrollment, fee details and student data), human resource management (employees’ data), exam, store & purchase and finance (accounting, payments, and investments, budget).

**ERP Implementation in TEIs:** There are two strategic approaches of ERP system implementation. The first approach is the TEIs go for generic version of ERP system. In this approach the institute has to make the changes in the processes to fit the functionality of the ERP system. This takes the advantage of future upgrades in the system. The second approach allows institutes to customize the ERP system as per the processes of the institute. This might lead in to costly affaire as the customization is time consuming, can introduce new bugs and costly too. Hence ERP vendors’ advice institutes to implement ERP using first approach and focus on process changes. Many TEIs have implemented ERP or are in the process of doing so. And they have successfully done it.

The conceptual model of ERP implementation TEIs shown in figure below is the procedure to adopt by them for successful implementation.

Figure: *Conceptual model of ERP implementation in TEIs*
Prospects and Challenges of ERP implementation: According to ECAR organization, the main advantages of ERP for educational institutes are:
- Improved information access for planning and managing the institution;
- Improved services for the faculty, students and employees;
- Lower business risks;
- Increased income and decreased expenses due to improved efficiency.

The ERP implementation benefits the TEIs in following ways:
- Integration of all processes
- Improved data integrity and reliability
- Real time data access
- Eliminate manual system
- Improve decision making
- Improved data analysis
- Reduced paper work

However, Heiskanen, Newman and Similä, (2000) suggest that ERP software, which incorporates best practices from the corporate business industry, is not suitable for universities, since they have unique systems and decision-making processes.

ERP implementation in any organization is deeply affected by organizational culture of that organization. Today’s educational institutes accept that education is a business and students are their customers. ERP implementation encourages such institutes to acquire business approach which requires lots of cultural changes in the institute. There can be resistance from the employees of the institute as they are familiar with the existing system. In such cases merely ERP implementation does not help. The employees must be involved during ERP implementation along with creating awareness about the benefits of ERP implementation.

There are varied forms of management hierarchy from institute to institute. Generally any institute operates into two directions: administration and academics.

ERP implementation can easily be reinforced the administration activity, but for academics it might find difficulty for the institutes to adopt it easily as ERP maintains transparency of their transaction. On the other hand the employees may fear for their job as various processes becomes automated. Hence the institute has to eliminate some job profiles while some new job profiles might create during ERP implementation.

Furthermore, Pollock and Cornford (2005) argue that ERP, as a “generic type of solution” from the ERP vendors, could be a high-risk strategy for the institutes as they functions with unique processes. Even though the institutes needs for unique business functions, ERP vendors encourage adopting generic type of solution. Hence there are very less chances to successful ERP implementation in the institutes.

As the ERP systems are dynamic and large integrated packaged solutions, the management and IT staff of the institute might face difficulties in understanding the ERP implementation even though they might have complete understanding of their own institute. (Pollock & Cornford, 2005). This is because the institutes have introduced many systems as per their needs. In the worst case, universities do not always have management or IT staffs who are well-versed in organizational functions.

Concluding Remarks: The TEIs are considered the finishing schools for young professionals, therefore the functioning of such TEIs needs to more transparent and effective. ERP systems help TEIs to provide disciplined way of working and better visibility to the functioning of the institute. To sustain in the competitive environment, TEIs now started implementing ERP. They need to adopt a proactive approach towards ERP and consider it as a long term investment.
Though the ERP market is growing and ERP vendors are shifting their focus to the educational sector, there are several issues to be resolved. Firstly, TEIs need to be made aware of ERP and its benefits. Vendors too need to study the educational processes with great attention so that they can provide ‘the best’ solutions for the TEIs. Due to the limited financial resources, the cost of the ERP needs to be reduced so that a larger section of the educational institutes gets benefits out of it. TEIs also need to carefully understand and evaluate their existing system and chalk out the plan for ERP implementation.

Before embark on an ERP system journey, TEIs have to ask themselves whether they are ERP ready. Some of the factors to be considered before starting an ERP system implementation are:

- Infrastructure resource planning
- Education about ERP
- Human resource planning
- Top management commitment
- Training facilities
- Commitment to release the right people for the implementation

These factors help organizations to understand their level of preparedness for an ERP implementation. These are certain challenges to be considered and addressed properly for successful implementation of ERP.

References: