Enterprise Resource Planning (ERP): Role in an Educational Institute

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ABSTRACT

In today’s time of Globalization each & every organization is growing at a very fast speed as compared to their previous speed. Every organization is facing the problem of resource utilization and it is one of the most difficult and challenging job for the organization because to use the resources in an optimized way is going to provide a good benefit for the firm. So, instead of manual operation, an organization needs an automatic tool for the resource utilization activities. ERP i.e. Enterprise Resource Planning is one of the latest technologies that many organizations have undertaken for the effective utilization of their resources. Typically, Enterprise Resource Planning (ERP) systems are software packages composed of several modules, such as human resource, sales, finance and production providing cross-organizational integration of transaction-based data management throughout integrated business processes support and information from various resources.

The article presents research results in the field of ERP systems and their use in higher education institutions. It compares all those activities which are important for the campus management such as admission, attendance of students, Placement data etc. performed manually or later on by ERP system.

Keywords
 ERP, Resource Utilization, Effective Utilization, ERP module, informatics

1. INTRODUCTION

Today’s era is rapid development era where everyone looking for fast growth in their work and simultaneously the organization also want better utilization of resources. Every organization tries to keep limited number of resource with high control over them while running any activity or project to minimize the cost of the activity or project which will also help to increase their profitability. The resource utilization is one of the most difficult and challenging job for any organization and every organization tries to reduce the human dependency plus needs an automated tool which helps to increase the effectiveness in integrity between all different functional aspect of the organization and decrease the human efforts which might affect the accuracy and rapid response during dynamic situation during workflow. To face and to fulfill all above aspects the organization require an integrated, automated, fast, feasible computerized tool which help in decision making, strategy planning, monitoring and controlling all the activities done during organization work.

The above all aspects are having one common solution i.e. ERP. Enterprise Resource planning (ERP) is latest high-end solution, information has lent to business application. The ERP solutions seek to streamline and integrate operation processes and information flows on the company to synergize the resources of an organization namely men, material, money and machine through information.

Educational institutions are becoming increasingly complex and are not limited to delivering education alone. They deal with a multitude of activities like admissions, library management, hostel management, placements, finance management and many other internal and external processes.

ERP systems are designed to enhance organization’s competitiveness by upgrading an organization’s ability to generate timely and accurate information throughout the enterprise and its supply chain. To be at par globally, institutions are taking education to a whole new level by making use of the latest technology services to suitably equip students and at the same time offering the parents/guardians frequent updates about their wards’ performance and related information.

A successful ERP system implementation can shorten production cycles, increases accuracy of demand for materials management & sourcing and leads to inventory reduction because of material management, etc. Moreover it can be used as a primary tool for re-engineering.

ERP Implementation process: - ERP implantation processes have three main phases, firstly Pre-implementation phase, secondly In-implementation phase and finally Post-implementation phase. Every phase is unique but interdependent to each other,
following table shows ERP implementation in very detail.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Implementati on phase In</th>
<th>Implementati on phase Post</th>
<th>Implementati on phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>BPR + BE</td>
<td>Development Approach + SDLC</td>
<td>Monitoring + maintenance</td>
</tr>
<tr>
<td>Outcome</td>
<td>Ready to implement ERP</td>
<td>ERP is ready to use</td>
<td>ERP Results and Reviews</td>
</tr>
</tbody>
</table>

The Post-implantation phase also continuous, dynamic and time consuming process in nature because none of the team member guaranty about the problems which may come after the ERP implementation. This phase reviews the ERP tool and monitor regularly, if any technical issue may arise then according to its nature the suitable resolving get done for maintaining continuous control over the ERP system. ERP (Enterprise Resource Planning) is an industry term for the broad set of activities supported by multimodal application software that help a manufacturer or other business managers. Originally, ERP packages were targeted at the manufacturing industry. ERP is a massive software engine that seeks to provide one seamless interface to all departments, systems and existing data within the organization.

A typical ERP system integrates all of an Organisation’s functions by allowing the modules to share and transfer information freely. In this paper, the basic objective is to study and analyze the current ERP module, specifically Human Resource management to get the difference between traditional workflow and ERP module workflow.

2. **OBJECTIVE OF THE STUDY**

- To get the idea of traditional workflow of the Educational Institute before the ERP implementation and compare with the modern way of working after implementation of ERP.
- Analyzing the Benefits of ERP for the different users.

3. **EDUCATION INSTITUTE MODULES COMPONENTS**
Educational institutions’ core challenge is centralizing, tracking and managing the various operations and information in a coherent manner to provide result oriented education. Optimization and resource utilization are the key aspects to achieve the best result from the existing infrastructure. The chief modules of our ERP Solution are:

- Admission of Students
- Attendance of Students
- Lesson planning & Subject Assignment
- Personnel Management
- Recruitment
- Compensation Management
- Personnel Development
- Travel Management
- Payroll

The advantages of ERP system are as follows:

i. Swift and streamlined flow of information
ii. Less time taken for business process cycle
iii. Easy Content management
iv. Improved existing processes due to diligent features
v. Increased Productivity due to Less manual work and calculation
vi. Increased transparency and flexibility of operations
vii. Enhanced Decision-Making Capability due to clear cut work bifurcation
viii. Improved utilization of resources due to Standardization
ix. Web login for guardians, students, staff
x. Email/SMS notifications for constant update
xi. Standalone/Distributed Model to synchronize the data at a central location online
xii. View reports /MIS statements securely from anywhere on the Internet
xiii. Single Click Interface that provides overview of all the departments

B) Administration
ERP can help an institute coordinate all tasks around student lifecycle management in a single place. It includes management of activities such as:

- Maintaining student information-attendance, marks, records, courses and overall performance
- Scheduling of classes, tests, examinations and events.
- Library management for the institute can be automated
- Automatic updating of the student database during promotion or course progression
- Automated report card and transcript generation for the students
- Management of student services around transport, canteen and hostel
- Knowledge management for the institute including repositories of course material, notes and collaboratively generated content
- Management of the placement process
- Managing communities of practice, including for alumni and employers

C) Financial Management
Campus ERP makes financial management faster and easier, providing accurate information available at any given time

- Fee management of student- automated record of fees and other charges
- Payroll management of employee and staff
- Purchase of Asset and Inventory management for the institute
- Analysis and generation of financial statement of the institute purchase and inventory, as well as statutory financial reporting.
- Budget preparation and financial planning

D) HR System
Campus ERP can help put an HR system into place:

- Class schedules for teachers, duties for staff members can be effectively assigned
- Maintaining attendance records of staff
- Efficient payroll management for staff members.
- Training management for Faculty & staff
• Performance management and feedback

There is a table showing the workflow change after the implementation of ERP in institute

Table-2 Workflow change Difference between Pre-implementation and Post-implementation

<table>
<thead>
<tr>
<th>Sub-Components</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission Management</td>
<td>This was very long procedure right from advertisement, application receiving,</td>
<td>ERP maintain the record of college visits for admission process, candidates from</td>
</tr>
<tr>
<td></td>
<td>scrutinizes the form, call for interview, evaluate them according to their</td>
<td>consultancies and their resumes; list of candidates available for full-time or</td>
</tr>
<tr>
<td></td>
<td>performance in personal interview and then take the decision for recruitment.</td>
<td>Part-time work etc.</td>
</tr>
<tr>
<td>Attendance of Students</td>
<td>It was a manual method including taking attendance in class and feeding of data in</td>
<td>This module helps the students and their parents to know their attendance on daily</td>
</tr>
<tr>
<td></td>
<td>system by Assistant. Only after the completion of month attendance is compiled and</td>
<td>basis after every lecture. Students don’t have to wait till the End of month to</td>
</tr>
<tr>
<td></td>
<td>students and their parents become aware of the % of attendance.</td>
<td>know their attendance.</td>
</tr>
<tr>
<td>Subject Assignment</td>
<td>Assignments were given in class either verbal or written on board if student was not</td>
<td>ERP maintains the record of Assignment as uploaded by the Subject faculty, anytime a</td>
</tr>
<tr>
<td></td>
<td>in class he/she may miss that.</td>
<td>student can get access of that.</td>
</tr>
<tr>
<td>Personnel management</td>
<td>Continues monitoring over the employees to get their performance.</td>
<td>Performance appraisal collected online and compare their performance with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>organizational goals for better valuation</td>
</tr>
<tr>
<td>Recruitment</td>
<td>This was very long procedure.</td>
<td>This ERP module used to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maintain the record of college visits for recruitment.</td>
</tr>
</tbody>
</table>

Compensation Management
- Very long term process as collection of data, compare his performance with organizational policies and make the decision.

Personnel Development
- Continues monitoring over the employee to get his performance and this become very difficult to take the comparative analysis of different employee

Travel Management
- Long and Manual process for collection of data

This module is integrated with personal and organizational development where the total expenses on the employee organization and their outcome get compare with
### Payroll

<table>
<thead>
<tr>
<th><strong>Payroll</strong></th>
<th>Manual and difficult job for account department like calculate monthly attendance, calculate his monthly salary according to its attendance, distribution of salary personally.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ Employee’s attendance and their time of entry to work and exit are entered in the system to determine the number of work hours.</td>
</tr>
<tr>
<td></td>
<td>□ This module tracks, check and reports both the hours of work and respective wages of employees.</td>
</tr>
<tr>
<td></td>
<td>□ Payment is directly transfer into employees bank account create transparency in Payroll system.</td>
</tr>
<tr>
<td></td>
<td>□ It also includes the process of calculating the taxes and deducts from the salary and also garnishee wages for charity purpose like child support and for cancer patients.</td>
</tr>
</tbody>
</table>

### Time and Attendance Management

<table>
<thead>
<tr>
<th><strong>Time and Attendance Management</strong></th>
<th>Time consuming process difficult to control because of following reason like Fake Attendance, proxy attendance in work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ This module is integrated with Payroll module.</td>
</tr>
<tr>
<td></td>
<td>□ Apart from the roles of Payroll systems, it also concentrates on the sick leave of the employees.</td>
</tr>
<tr>
<td></td>
<td>□ Time and attendance are easily recorded to the system by scanning the employee barcode which is located in every employee's identity card.</td>
</tr>
</tbody>
</table>

**Benefits of ERP implementation for different parties**

After analyzing the above mentioned table, we can understand the benefits of ERP Implementation for the different persons associated with each other in an Educational Institution.

- **A) Students:** Student life can become easier with information available at all times – attendance, timetables, reports cards, event schedules, project assessments, internal assessments, and course materials. Thus, institution-student and faculty-student communication is improved with information being shared in real-time resulting in students becoming more participative.

- **B) Faculty:** Faculty can access information about courses and students at all times. They can plan out classes and assignments for their students effectively. Evaluation also becomes easier and transparent. Faculty members can therefore dedicate more time towards core activities instead unproductive tasks. Services such as leave management, payroll, purchasing can also be automated.

- **C) Management:** The most significant benefit that management can achieve is the reduction of burden on manpower. Cumbersome processes are simplified drastically. All data is accessible to all by the click of a button. With financial activities being automated, the management can obtain results, reports and analysis at any given point speeding up the decision making process.

- **D) Parents/Guardians:** Parents and guardians are among the most neglected stakeholders when it comes to accessing information about their wards. Parents can be empowered by providing a real-time dashboard of information on their wards, which they can accessed non-intrusively. This provides transparent flow of information between the institute and the parents.

**4. LIMITATIONS OF ERP**

The ERP is very vast and broad area for research and it also has multiple number of different modules and again these module further divided into sub-module so my research is get restrict to only those fixed modules and that research at primary level of considering very basic and core aspect of these ERP module. Some of the limitations for ERP in Institutes are the following:

- In the starting time of Implementation of ERP modules there may be duplicity of work to manage the Manual work simultaneously as there is less trust on ERP system.
- In India, one more problem is the Non acceptance of Technology change by the employees who will work with those new system or modules. So, Employees may don’t feel comfortable with the working on ERP modules.
• Also for successful Implementation, there is requirement for effective training module for the users which can help them to use it in friendly manner. But most of the time the users may resist not to learn it for the desired purpose.
• A campus ERP solution may be a cost burden. ERP implementation without managing IT infrastructure and Cost-effective availability of internet bandwidth, which are still an issue with a lot of institutes, is invaluable.
• Changes in Management or governing organizations may result into changes in method of work, rules etc. which will be having the impact on working of ERP.

5. FUTURE SCOPE

As in previous section, I have mentioned the ERP is very vast and broad area for research and it also has multiple numbers of different modules. This literature covers introductory aspect and it requires extending at different modules of ERP like finance, sales, Production etc. useful to be reviewed by the training supervisors.

This literature also helps to consider primary aspect of ERP with special reference to SAP. There are some other vendors who implement ERP tools like BAAN, OracleSoft etc. So, their might be some changes may find. Their might be get to consider some different ERP implementation methodology that may change the workflow, mentioned in this paper.

6. CONCLUSION

The challenges for higher education institutions have changed over the years. Needless to say, as the size of the institutions grows, they just need a campus management product as a hygiene factor.

The information received from these modules is required to have a continuous flow and accurate evaluation for the Academic & professional development and for the welfare of the Students, employees and management. Thus, ERP is represented as a useful tool to help and make the users easier and focus their work in a direct relation with staff, skills and aspiration of an individual related to the objectives and the goal of the Institution.

Education Institutions can improve enrollment and student success, reduce operating costs, and increase constituent contributions and engagement with comprehensive higher education ERP system.

It is a simple yet powerful one point integrated platform that connects all the departments of an institution.