Implementation of ERP for Educational Institutions

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Abstract—Enterprise Resource Planning (ERP) system consists of different sets of software that are used to integrate the business functions in a company or organization. It is a modularised system which mainly saves paper by reducing the paper work and maintains huge amount of data. This paper focuses on the implementation of ERP systems in educational institutions. Educational sector is a rapidly growing sector where the flow of data is very high. Thus implementing the ERP systems in educational institutions will effectively manage the data in such organisations. The implementation needs careful planning and organization. In the institute all the elements stay connected and updated with the current affairs. The system improves efficiency by eliminating data redundancy. The system will provide beneficial to the institute by making it faster and efficient as most of work done by the ERP system. The information provided in this paper may be used to guide educational institutions in the implementation of ERP systems.

INTRODUCTION

Enterprise Resource Planning (ERP) system has been emerged since 1970 which integrates information within and across the several areas in an organization. It was developed in the concept on Material Requirement planning (MRP) from production management to decision making by integrating the functionality of sales, human resource management, accounting and financial services. Since 2000, ERP has extended version of ERP II systems that have enabled integration across supply chain such as advanced planning systems (APSS), analytics, transportation management systems (TMS), warehouse management systems, business intelligence (BI), customer relationship management (CRM) systems and supplier relationship management (SRM) systems.

Expanding knowledge and advanced technology brought new competitive era for the higher education sector to meet global customer requirements on quality and performance. These have forced educational institutions to improve their service quality level and innovation by implementing ERP systems which in turn enhance their performance and efficiency. The ERP system replace the existing integrated information processing in the corporate world. Several benefits result from the implementation of ERP systems for educational institution:

- improved information supply and flow for planning and controlling processes of the college;
- improved service for faculties, students, and staff;
- lower business risks;
- reduced expenditures through increased process efficiency.

The implementation of integrated application systems such as ERP systems is a complex and time-consuming project during which organizations face both great opportunities and enormous risks. Furthermore, these implementations often require significant organizational changes. Implementation at universities looking to automate their Academic and Administrative processes. This comprehensive suite streamlines complete student life cycle from Enquiry to Graduation as well as administrative processes such as student, staff, accounts where each module provides different privileges for its users.
universities represents a doubly difficult task as these systems influence both the academic and administrative fields. Here, approaches that have proven successful during the last decades for the implementation of application systems in private companies cannot be transferred equally to projects in HEIs. This must be taken into account when implementing ERP systems at HEIs. In addition, vendors have less experience with the implementation of application systems in universities than in enterprises. To take advantage of the potential opportunities rather than get caught by the risks of these implementation projects, it is essential to focus on those factors that support a successful implementation of an information system. By being aware of these factors an organization (private enterprise or HEI) can positively influence the success of the implementation project and effectively minimize the project’s risks.

II SYSTEM DESIGN

A. Detailed Problem Statement

An ERP software system for Educational Institutions will include the following primary modules/components: The Admin, the Student, the Staff and the Parent. Other than that to make work a little bit more easy we have data warehouse, reporting and analytics, workflow, document management. Implementation services will include: technical services, data migration and conversion services, integration services, database management services, and system/end-user training.

B. System Architecture

A System Diagram (SD) in software engineering and systems engineering is a diagram that represents the actors outside a system that could interact with that system. This diagram is the high level view of a system. System Designs shows a system, often software-based, as a whole and its inputs and outputs from external factors. System Diagrams are diagrams used in systems design to represent the more important external factors that interact with the system at hand. The objective of a System Diagram is to focus attention on external factors and events that should be considered in developing a complete set of system requirements and constraints.

Core Modules of the System

- Admin
- Student
- Staff
- Parent

1. Admin Module

An admin has all the access rights to the system. An admin manages the student Admission, Staff Registration, Academic Records, SMS gateway, Bus ticket booking system and Parent Portal. First he adds all the staff members of the respective departments. Then the classes are added and the respective staff members are allocated as a class coordinator. After adding class and subjects the student registration process starts. All these tasks are managed by an admin only. This access is forbidden for the rest of users. Admin can manage the accounts of the all the students, staff and parents also. He is responsible to create and send student reports to their respective parent. All the logs of student information can be viewed and managed by Admin itself.

Workflow of an Admin module:

1. Start
2. Login
3. Add/Delete Staff
4. Add/Delete Student
5. Add/delete/Edit Class
6. Add/delete/Edit Parent
7. Leave Form Management
8. Bus Ticket Booking system
9. Manage Compliant system
10. Manage SMS.
11. Hostel Facilities (if needed)
12. Logout
13. Stop.

2. Student Module

Students are admitted by admin only to the system. When the student successfully gets registered into the system he/she gets an automatically generated username and password on their registered e-mail id and can be managed by student from that point on. Student has access to personal profile, current attendance record, Class Tests records, Daily Class Routines and all the notifications and upcoming events which are managed by admin. Students also view his respective bus route and bus number through the bus ticketing system. Another important facility provided for students is to view the notification of his/her respective department. Students can register complainants for an instance if a light goes out of order in his/her hostel room.
Workflow of Student Module:

1. Start
2. Login
3. View personal information
4. View subjects
5. View teachers
6. View marks
7. Register Compliant if an issue occurs
8. Book bus ticket
9. View attendance
10. Logout

3. Staff Module

Staff members are registered by admin and login details are generated by admin which can be managed by the staff afterwards. Staff has access rights to manage all the data of their subjects of respective class. They can manage daily attendance of all students of respective subjects and classes. Staff members are able to give notifications and can upload some documents related to their respective subjects. Staff can generate the daily, monthly or yearly report of individual student as well as class.

Mark sheet generation is also available for staff. Instead of manual work this application gives automatic work.

Workflow of Staff Module:

1. Start
2. Login
3. View student information
4. View/Edit student’s marks
5. Manage daily attendance of students
6. Add notes
7. View subjects
8. View personal class routine
9. View transport

4. Parent Module

Parents are able to track all the information and academic records of their respective child. They are not able to view the information relevant to other students. The parents are added by the admin after the admission of their child. Parents can view result sheets, attendance records, notifications etc. This module lets a parent to keep track of its respective child’s educational growth. Parents are able to communicate with teachers if they wish. In short this module facilitates to view educational growth of respective child.

Workflow of Parents Module:

1. Start
2. View Student Information
3. View student Mark sheet
4. View attendance
5. View Fees payment details.
6. Logout
7. Close

III. RESULT ANALYSIS

The following figures show the user interface for the ERP system. Fig(a) shows the login page for the admin, student, staff and parent. Fig(b) shows the Admin interface. Fig(c) shows the Student interface.

Fig (a)

Fig (b)

Fig (c)
REFERENCES