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Open Source Enterprice Resource Plaining

Tanneeru Khanna Vijay
M.Tech Student,
Sree Rama Institute of Technology and Science.

Nrusimhadri Naveen
Assistant Professor,
Sree Rama Institute of Technology and Science.

ABSTRACT:

Enterprise resource planning (ERP) systems are highly complex information systems. The implementation of these systems is a difficult and high cost proposition that places tremendous demands on corporate time and resources. Many ERP implementations have been classified as failures because they did not achieve predetermined corporate goals. This article identifies success factors, software selection steps, and implementation procedures critical to a successful implementation. A case study of a largely successful ERP implementation is presented and discussed in terms of these key factors.

I.INTRODUCTION:

The initials ERP originated as an extension of MRP (material requirements planning; later manufacturing resource planning) and CIM (Computer Integrated Manufacturing). It was introduced by research and analysis firm Gartner in 1990. ERP systems now attempt to cover all core functions of an enterprise, regardless of the organization's business or charter. These systems can now be found in non-manufacturing businesses, non-profit organizations and governments. To be considered an ERP system, a software package must provide the function of at least two systems. For example, a software package that provides both payroll and accounting functions could technically be considered an ERP software package Examples of modules in an ERP which formerly would have been stand-alone applications include: Product life cycle management, Supply chain management (e.g. Purchasing, Manufacturing and Distribution), Warehouse Management, Customer Relationship Management (CRM), Sales Order Processing, Online Sales, Financial, Human Resources, and Decision Support System. Some organizations — typically those with sufficient in-house IT skills to integrate multiple software products — choose to implement only portions of an ERP system and develop an external interface to other ERP or stand-alone systems for their other application needs. For example, one may choose to use human resource management system from one vendor, and perform the integration between the systems themselves. This is common to retailers, where even a mid-sized retailer will have a discrete Point-of-Sale (POS) product and financial application, then a series of specialized applications to handle business requirements such as warehouse management, staff rostering, merchandising and logistics. Ideally, ERP delivers a single database that contains all data for the software modules, which would include:

•**Manufacturing** Engineering, bills of material, scheduling, capacity, workflow management, quality control, cost management, manufacturing process, manufacturing projects, manufacturing flow.

•**Supply chain management** Order to cash, inventory, order entry, purchasing, product configurator, supply chain planning, supplier scheduling, inspection of goods, claim processing, commission calculation.

•**Financials** General ledger, cash management, accounts payable, accounts receivable, fixed assets.

•**Project management** Costing, billing, time and expense, performance units, activity management

•**Human resources** Human resources, payroll, training, time and attendance, rostering, benefits .

•**Customer relationship management -** Sales and marketing, commissions, service, customer contact and call center support.

•**Data warehouse -** and various self-service interfaces for customers, suppliers, and employees.

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•**Access control -** user privilege as per authority levels for process execution.

•**Customization -** to meet the extension, addition, change in process flow

Enterprise resource planning is a term originally derived from manufacturing resource planning (MRP II) that followed material requirements planning (MRP). MRP evolved into ERP when "routings" became a major part of the software architecture and a company's capacity planning activity also became a part of the standard software activity. ERP systems typically handle the manufacturing, logistics, distribution, inventory, shipping, invoicing, and accounting for a company. ERP software can aid in the control of many business activities, including sales, marketing, delivery, billing, production, inventory management, quality management and human resource management.

II.OSSLIB:

Open source software library framework written in php and JavaScript, which act as a middle ware for service oriented architecture. Which helps to design and develop complex, data base driven website easily with re-usability and pluggability of components, rapid development of modules, and the principle of DRY (Don't Repeat Yourself).The usage of php and java script in OSSLIB design is to make the complete technology transfer of the software solution very easily .

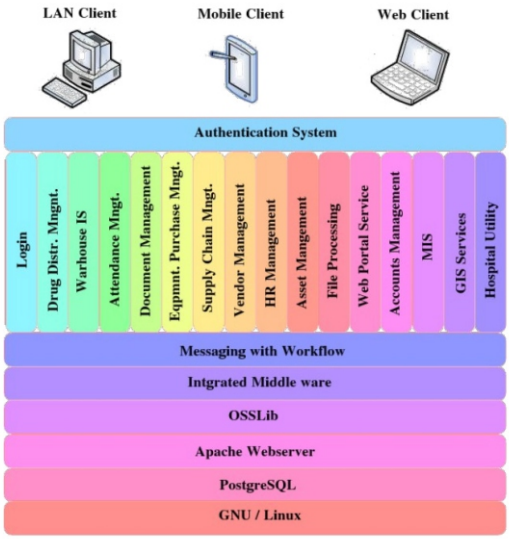

FIG 1: System Architecture

III.OSERP Implementation:

The open source Enterprise Resource Planing is implement main view is to make ERP better than ever to bring business solutions to the small scale industries with higher integration of modules for free of cost with all open and free source software's. OSERP is a work-flow based ERP solution with great reliability, flexibility and ease of operation. These packages have software modules that cover all the area of operations of a engineering service and manufacturing company. The ERP is currently used in various sectors in India such as Electronic component manufacturing. Engineering, System integration, Trading, Banking, Finance, Publishing and Printing Industries. OSERP is a open source ERP licensed under GPL and committed to Open Source Business model. It's not a readymade ERP for any purpose. It's a framework based ERP with 40+ modules. Each module can be easily customized based on the organization requirements. OSSLib, the framework used in OSERP make it easily customizable. OSERP ensures full technology transfer to its clients. It gives full freedom and support for the further development and modification of the ERP by the client/ organization's technical team.

IV.The key to manufacturing OSERP:

The enterprise applications space in India has been in a state of flux since it first made its presence felt. Over the last only some years there has been a clearer understanding of the critical business advantage it can provide.A recent Gartner report that delved into the relevance and utility of enterprise applications stated that such applications can no longer be providing mere expediency in existing business process, but rather, they need to have an inherent analytic capability to effect business change. Obviously, USEFULNESS or USABILITY is driving the adoption of ERP solutions. Today, the Rs 321 crore Indian enterprise solutions market is undergoing a fundamental change in terms of the value proposition it represents and also in the vendors' approach toward selling these solutions. This change is reflected in increasing adoption not just by large IT savvy companies, but also those in the SMB segment. To begin to define usability, it is best to start with the anticipated benefits such software solutions can deliver. A software solution that scores high in usability will shorten implementation time frames and reduce the amount of training required to go live, in turn enabling a faster return on investment and delivering benefits more quickly.

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Such a system will result in a lower total cost of ownership, is likely to change and grow with your company, allows for easy upgrades and interoperability, and makes it much less likely that it will need to be replaced to enable future business processes. Software vendors are adept at making their ERP look user-friendly. Carefully scripted and well-prepared demos can mask the more cumbersome aspects of day-to-day business processes.

Selection committees are not usually made up of people who process transactions all day, so extra screens, background processes or required keystrokes may go unnoticed. And matching up the software business flows with your in-house business processes doesn't really tell you anything about the system's ability to support your future needs. Even a hands-on session won't help you make the right choice in this crucial decision.

V.Authentication System:

In every system security plays major role, in ERP the complete data was pooled at one place so if the security is not maintained properly then it may leads to data lose in OSERP we are predicting security breaches with some data encryption methods like MD5 which provide high end encryption code for original data .

•OSERP has a strong authentication system powered by OSSLib.

•The database passwords or user passwords are not stored in files or databases.

•The users are authenticated for connecting to database with same privileges stored in the application software so attacks like SQL injection will not effect the system .

•Use of strong user group concepts from postgresql.

•Check privileges of all user periodically and able to revoke privileges at any point of time.

Even though authentication system implemented the administrator is capable to configure and reset the user privileges in a easy way from a simple user interface window which is the best advantage with OSERP.

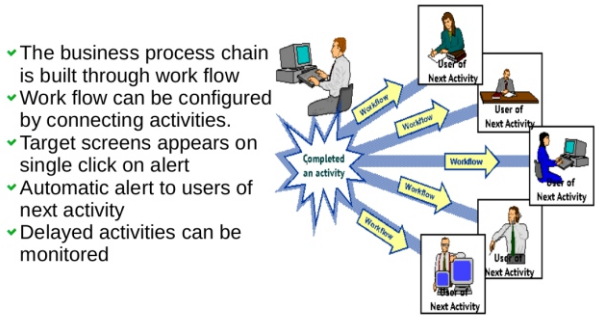

Fig 2: OSERP Authentication system

VI.Work-flow Enabled:

ERP work flow is one indicator of whether or not an implementation project can be considered a success. When a new software system is fully integrated and working seamlessly from the data entry points through to the real time performance and financial reports, it validates the decision to implement ERP.Work-flow in OSERP is shown as fallowing figure

VII.Conclusion:

The first three dominant success factors of TgmI Info Tech, BPCL and ITTI are related to the quality dimensions, suggesting that the success of implementing ERP system is largely determined by the quality dimensions. The results indicated that technological.

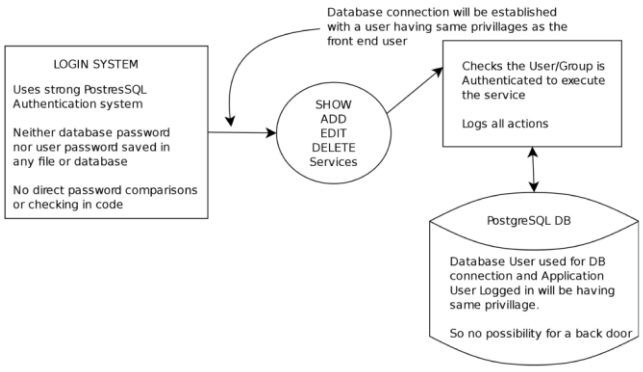

Fig 3: OSERP Data Flow

newness was the most important factor in determining the quality of the system. System quality, such as performance, flexibility of changes, response time and ease of use, is a technical issue. This result confirmed conventional wisdom that the pursuit of state of-heart technology is a risky proposition.

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In addition, different aspects of system quality, such as response time, ease of use, system reliability, and flexibility of the system have been examined by IS researchers. Most of the semeasures are fairly straightforward, reflecting the more engineering (technical) oriented performance characteristics of the system. Researchers found that these engineering – oriented performance measures were significantly related to technical-related issues of the proposed projects. This paper proposed a success model and empirically tested the relationships between variables. In summary, this research discovered that system quality and service quality are important dimensions for measuring post-implementation ERP success. Service quality and system quality dimensions play more important roles than their information quality counterpart in terms of influencing ERP benefit of use and user satisfaction . It's rare today that a company has no IT systems in place, so it's important to select applications that run on industry-standard platforms so that applications can easily inter operate. Investigating the technology that surrounds required business functionality can be even more important than the functionality itself. After all, it's relatively easy to add new features to a system

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