Modules of Enterprise Resource Planning (ERP): An Overview

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Abstract

The present paper is an attempt to understand the various modules of ERP in general and to undertake the empirical research on ERP and Supply Chain Management (SCM). In this regard secondary data collected from various journals. During the informal discussion with various people it is understood that the importance of ERP drastically changed over the years. However, it depends upon the size of organisation, use of ERP, cost benefit are some of the issues plays an important role.

KEYWORDS- Enterprise Resource Planning, Organisation and Management

An Overview

There is a general belief that ERP system helps to improve the performance of the organization since the system is meant for that. But any system needs time to deliver. Moreover, it is the responsibility of the top management and the system implementing organizations to ascertain the exact nature of the requirement that the organization is in need. Matching the exact requirement with the system is the real problem that most of the organizations are facing now a day. There should be adequate link with the business cultures of the organization. It is important to see that different ERP vendors are providing different facilities in their system but the basic model remains same. Additional modules should be developed as per the need of the organizations. There should be distinctive features in it. The requirement of a large organization should be different from the small organizations. Not all the modules are equally important for all the organizations implementing ERP system. As the performances of the various departments of the organizations are measured in physical terms including labour, it becomes easier to judge these performances to measure the efficiency and effectiveness. This particular feedback system helps to improve the operational efficiency of the organization on a long term basis.

Objectives of the study

- ✓ To understand the various modules of ERP
- ✓ To undertake empirical study on ERP and Supply Chain Management (SCM)

Research Methodology

Secondary data used for the development of concept.

Modules of ERP

Following are the important ERP modules which are relevant irrespective of the nature of the organizations are listed below:

- Accounting Management
- Financial Management
- Manufacturing Management
- Production Management
- Transportation Management
- Human Resource Management
- Supply Chain Management
- Customer Relationship Management
- E – Business

Accounting Management

Accounting management module of ERP plays a great role to improve the operational efficiency of the organization. As the system use codes to incorporate data on various accounting fields, it helps to transform the abstract accounting job into an activity level. Once the system shows activity level works related to various accounting and financial aspects of the organizations, it becomes easier to take a decision such as revenues, costs, assets, liabilities etc. The ERP system can be integrated into four stage model and transformation of accounting management into ERP system can be seen at the fourth stage of the model (Kaplan and Cooper, 1998 pp 11 – 24). At the beginning the system may not be adequate to incorporate any sorts of financial reporting. In the second stage the system can be witnessed improvements after adding some of the important financial systems to meet the regulatory requirements. At the third stage, a more customized version can be seen where some additional value added features may be added like cost management, financial reporting and performance measurement. But at this stage each and every system can be seen as an integrated system where it performs and provide results individually. This process fails to provide results and as a result of this there is a need to develop a more integrated approach. This can be possible at the fourth stage where each of the individual activities can be interlinked to get better outcome. The financial data can be incorporated in the system and the same can be extracted as and when the need arises. This will helps in decision making and improves the various fields like costing, budgeting, performance management, resource spending, forecasting. So, the new system may help the company to get the cost and performance informations in a more specified manner may be on a daily basis.

Financial Management

Financial resource planning is another module which is being used frequently by the organizations. The organization has to meet the requirements like manufacturing, order receiving, sales management, supply of raw materials, inventory management etc. Every department is dependent on finance department as their financial requirements are dealt by them. For a finance manager it is important to identify the real requirements of the financial resources. The main objective is to stick to the budgeted allocation. Any potential future investment or increased in unplanned expenditure should be dealt with caution. Unless and until it is not addressed it may create pressure on the company's financial reserve. The financial data generated by various departments can be incorporated in the financial module of ERP and the finance department can access these data to understand the real financial requirements. The future investment pattern can also be addressed with the help of these data. Before the implementation ERP solutions, most of the managers have to

rely on the informations provided by various departments in an unstructured manner which becomes difficult to interpret. The logical sequences of the data provided by the module thus becomes more effective and add more values to increase the operational efficiency of the organization as a whole. The system is able to provide all types of financial receivables and payables. Hence, it has the option to create a transparent system which is very crucial. This system is able to provide financial data to take decisions in a more efficient manner. Given the situation and demand for financial data in an organization each and every module of the software should include basic to complex functions of financial departments. Some of the important functions developed by vendors are as follows:

- Accounting transactions
- Taxation
- Financial reporting
- Compliance management
- Audit capabilities

Inclusions of all these facilities help to develop a comprehensive model to address the various financial reporting needed by the organizations.

Manufacturing Management

The manufacturing management module is the most sought after module for most of the organizations engaged in manufacturing businesses. The specific requirements of these organizations are totally different from any other organizations. There are various stand alone manufacturing models but integration of the system with the ERP software is surely helps to give the value added outcome. Though, ERP system has an integrated model still product wise there may be some variations exists. The main area of concern is related to backend as well as front end business solutions. Most of the manufacturing organizations are mainly concerned with the supply side of the raw materials. Non availability of raw materials or delay arrival of inputs often hampers the production in the factory. Simultaneously, inventory management is another area of concern which may affect or delay the production process. A proper monitoring system will help to track the delivery system in both front end and back end activities. If the system has been implemented then it will help to implement Just in Time (JIT) in the organization. The various activities which can be done with the help of manufacturing management software are as follows:

- Continuous Process
- Contract Manufacturing
- Job Shop
- Batch Processing
- Repair and Maintenance\
- Repetitive or work order based

At the end it can be said that manufacturing management should be made as per the demand and nature of the manufacturing units. These requirements should be reflected in the module otherwise it won't produce the expected results.

Production Management

Production management is one of the important dimensions which all the organizations are focusing on. Production is treated as the backbone of any manufacturing organizations. Timely production of products is surely able to develop a good relation in the market. The market demand is often influenced by the consumers. As the nature of the market changes, there is a need to change the production schedule as well. The objective of the organization is to utilize the existing capacity to the fullest possible way. Underutilization of the capacity is often increases the cost of operations. A production schedule if developed will help to bridge the gaps between market demand and supply of products. Some of the important features of production management module are as follows:

- Creation of master data on production planning
- Manufacturing resource planning
- Capacity planning
- Production control and costing

Overall, these features are effectively design to handle the issues that the manufacturers are facing during their day to day production. The system has the capacity to use the existing resources in a planned manner so as to bridge the gap if any.

Transportation Management

Distribution is stands at the heart of organization. Out of the four Ps of marketing, viz product, price, place and promotion, distribution is part of place. Transportation is a process developed by each and every organization for smooth functioning of the distribution process of that organization. So, without proper transportation system, the distribution becomes ineffective. Distribution system serves as a inter linkage between the demand side and supply side of the organization. It is crucial to develop a system which not only measure the present as well as future market demand of the product or services, it also helps to pick up the finished goods from the side and send it to relevant market where demand exists. The system also works to ensure smooth flow of raw materials for the products that the organization is developing. An organization which is largely depends on this distribution based model, it becomes important to analyse the inventory level, quick movement of goods and services, ensure robust supply chain management system. The integrated model should optimize the existing resources in such a manner so that both the time and money saves. The cost of transportation surely affects the price of the final product. Keeping this thing in mind it is important to develop the model so that it helps to develop a good relation with the suppliers as well as the customers. A software system exclusively developed for this purpose thus, becomes more relevant in this highly competitive market. The below mentioned solutions are provided by the ERP solutions on transport management:

- Merchandise importing
- Timely supply of raw materials
- Timely supply of finished goods in the market
- Development of Distribution Requirement Planning (DRP)
- Development of multi warehouse distribution channel

All these features are integral part of the ERP module. Though, it looks easier to manage but in reality the entire planning requires a thorough understanding about the entire system. Since, this is an integrated system; delay in one segment may affect the entire chain in the system.

Human Resource Management

It is a proven fact that human resource is an integral part of any organization and their development should play an important role to develop an overall efficiency in the organization. A proper Human Resource Management (HRM) has the ability to create a distinct and unique organizational efficiency and culture. Till date many researches are conducted in the field of HRM but most of the cases the role of IT becomes irrelevant as the organizations are preferred to practice old school model. Even after the introduction of ERP system, it did not see any changes. A typical ERP system mainly covers the sales, logistics and production side of the organizations. Integration of HRM system as a part of ERP module has come into picture after a long time. HRM has many diversified field. Some of the important areas which can be integrated are human resource planning, recruitment management, training and development need assessment, time management, performance management, compensation management etc. Most of the organizations are facing difficulties in maintaining employee informations, applicant selection, fixation of compensation, government reporting and norms etc. The stand alone system may not be well equipped with the specific need of the organization as a whole. Thus, HRM module of ERP may be the solution of the problem faced by most of the organizations. Some of the key components of ERP HRM module can be mentioned below:

- Components
    - HR Management
        - Personnel Records
        - Resumes
    - Benefits Administration
        - Links employee data to actual benefits
        - Allow selection from group of benefits
    - Payroll
        - Paychecks, tax reports, accounting data
    - Time and Labour management
    - Employee/ Manager self service
        - Travel reimbursement
        - Personnel data and benefit changes
        - Training requirement

Human Resource Decision Supported by an ERP System

Subsystem	Questions & Decisions
Recruiting	Do we have any internal candidate or need to recruit from external sources
Job Analysis	What are the characteristics of our most effective managers?
	What are the characteristics of IT infrastructure?
	What skill sets are missing among our HR professionals
Compensation	What salaries and compensation packages do we need to offer?

	What is the impact of various pay plans on retention?
Benefits	How can we control the cost of employee health benefits?
	Can we reduce employee benefit costs by providing self selection of benefits?
Workforce Development	What replacement personnel need to be selected before the retirement of existing employees?
	What should the future workforce look like
	What additional work force will we need in the short term and long term?
	What are the implications of workforce needs for the training and development

Source: Prentice Hall, 2005: Enterprise Resource Planning, 1ˢᵗ Edition by Mary Sumner

Concluding Note

ERP plays an important role for the transparency of the system. This is more important for the modern business. However, it depends on the requirement, capital investment capability and cost-benefit analysis also plays an important role. However, if the ERP is being implemented in the organisation it will give new dimension to the business and more business opportunities can be generated.

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