

Review Paper on Application of ERP in Construction Project

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Abstract- India has finally fallen into the groove as far as globalization is concerned. This has led to the domestic large and medium sized companies embrace standards and processes that measure up to global standards. It has become more the reason for IT solutions vendors to cheer up looking at the requirements of the Indian market. Statistics reveal that there has been a significant increase in the IT spends of Indian companies in the last few years. ERP was one of the first IT concepts to hit the Indian market, although with meagre success. Enterprise Resource Planning (ERP) is software driven business management system, which integrates all facets of the business, including planning, manufacturing, sales, and marketing. The business environment has become increasingly complex and the marketplace has changed from local to global. Management is under constant pressure to improve competitiveness by lowering operating costs and improving logistics. Organizations therefore have to be more responsive to the customer and competition. And ERP as a business solution aims to help the management by setting better business practices and equipping them with the right information to take timely decisions.

I. INTRODUCTION

Enterprise Resource Planning ERP is an integrated suit of application software modules, providing operational, managerial and strategic information for an enterprise, in order to improve productivity, quality and competitiveness. ERP enables an enterprise to balance its resources such as manpower, machines, materials, money, methods and marketing to stay competitive in a globalized economy. It is a business tool rather than a system tool. ERP is an integrated system that allows information to enter at a single point in the processes and updates (e.g. At the material receiving stage of a manufacturing process) and updates a single shared database for all functions that directly or indirectly depend on this information. Once placed into the system the information should be available in all the necessary forms through which it may be accessed, throughout the system.. To enable the easy handling of the system the ERP has been divided into the Core subsystems or modules viz. Sales and Marketing, Master Scheduling, Material Requirement Planning, Capacity

Requirement Planning, Bill of Materials, Purchasing, Shop floor control, Logistics, Asset Management, and Financial Accounting. It cannot be overemphasized that quality is an objective of project management that is equally important to project budget and schedule of construction; in India still there is no specialized module of ERP which has been developed for quality control or quality management. Whatever one or two modules of ERP for quality in construction are available, they just deal with superficial elements in Quality Control.

II. STATE OF DEVELOPMENT

This paper reviews previous researches concerning the factors behind using or avoiding ERP. Enterprise Resource Planning is important software in construction industry. Various authors have different contribution in their own respective module. Purpose of this chapter in report is to highlight the work done on use of ERP and gives some useful terms which will useful further in this report

Abhijit N. Bhirud ERP or Enterprise Resource Planning can enable companies to optimize their business processes and allows for necessary management .Thus, ERP can be said as system software that can integrate several activities in a project & deliver a unison result for bettering performance & increase profits. A construction ERP system provides Cost optimization, incorporate design changes, Consistent quality conformance, Reliable, Faster and on time delivery, Incorporates value engineering, Collaborative work environment, team tracking facility. The case study relating to ERP implementation by firms operating in the Infrastructure construction industry is investigated. It is found that to ensure efficient implementation firms must first have a good reason why ERP should be implemented, determine the tradeoffs, choose an appropriate re-engineering process, identify and mitigate risks that may arise. Based on the findings, strategies for managing the implementation of ERP in the construction industry are developed.

C. S. Dudgikar It is found that the majority of construction firms in India have awareness about the ERP systems but very few organizations have so far implemented

such systems. The major reason is that the implementation of any ERP system needs a huge investment in time, money and resources. However, when implemented to solve the right problems, these ERP systems can be a powerful tool for business improvement. The construction industry is a highly fragmented industry. For developing quality module of ERP, a resource (5 M's) based e-Model has been developed. The reports of this module have been designed in such a manner so as to give the concise and precise knowledge of quality parameters of a construction project to its various stakeholders such as builder, developer, contractor, project manager, quality inspector and last but not least the consumer. This paper even exhibits these reports which inform the various stakeholders and help them deciding the right quality benchmarks at a right time within a right budget.

Jonathan Jing sheng Enterprise resource planning ERP Was originated in the manufacturing industry. It provides a general working environment for an enterprise to integrate its major business management functions with one single common database so that information can be shared and efficient communications can be achieved between management functions. This paper first briefs the ERP technology, its origin, and its current development in general. Based on the needs of running a construction enterprise, ERP shows its potential for the construction industry. However, the unique nature of the industry prevents a direct implementation of existing ERP systems, which are primarily developed for the manufacturing industry. This paper underlines the importance of the establishment of the basic theory for developing construction enterprise resource planning systems CERP. A CERP must address the nature of the general industry practice. Fundamental features are identified and discussed in the paper. Three-tiered client/server architecture is proposed, with discussions on the functions And major components of each tier. Needed research issues are discussed, including CERP architectures, project management functions, advanced planning techniques, standardization of management functions, and modeling human intelligence. Construction management examples are incorporated into the discussions.

Mahmood Ali Benefits reaped from implementing Enterprise Resource Planning (ERP) systems have made them a critical part of organizations. These systems, which are developed on best business practices, are sometimes unable to satisfy unique organizational needs, such as those specific to the construction industry which present a unique set of challenges different from those of manufacturing and service industries. This paper aims to study the development of in-house ERP system in an organization in a developing country, and seek to explore and understand the development of ERP system designed exclusively around the needs of an

organization. This study adopts a case study based qualitative research methodology. Primary data is collected through a series of interviews, discussions with the project manager, development staff and end users. The outcome of the study shows that through proper planning coupled with detailed needs analysis, suitable change management strategy, an experienced project team and selecting the appropriate software development process, any organization can design and develop ERP system that caters for the organization specific needs. Therefore, eliminating the need of complex software customization or altering business processes. Further, by developing an in-house system, the probability of a failed implementation is greatly reduced thus allowing the organization to focus on its core Business while benefitting from the new system.

Sudhanva Kadoli India is a developing nation, with globalization widely making impact over its economy. It is observed that large amount of development is mostly concentrated towards the country's urban infrastructure. Due to larger population migrating towards cities it is necessary to accommodate and provide basic infrastructural facilities to their ever increasing demands. So it is necessary for the construction enterprises to efficiently manage their functioning and address the customer requirements by balancing the functioning of individual departments in the construction enterprise. Construction ERP is an ultimate solution to manage entire enterprise under a single roof. This paper presents an efficient ERP system to manage different departments in accordance with for the managerial the company policies and customer requirements. ERP is responsible for integrating business processes within an enterprise. This will only automate the functioning of Construction Company. To enable decision making tier of the company based upon history and future risks BI and DSS are implemented using feedback logic.

Thakare Amol K An Enterprise resource planning system is a fully integrated business management system covering functional areas of an enterprise like logistic, production, finance, accounting and human resources etc. It organizes and integrates operation processes and information flows to make optimum use of resource such as men, material, money and machine. ERP is a global tightly integrated closed loop business solution package and is multifaceted. In simple words, Enterprise Resource Planning promises one database, one application, and one user The Study aims at studying effectiveness of ERP implementation in construction industry. The Study was performed on HIT-OFFICE which is an ERP software developed by EDSS Pvt. Ltd. The effectiveness of implementation of ERP was studied by estimating, scheduling, material planning, contractor management and billing in HIT-

OFFICE using Quotation, Purchasing, Inventory, Study and Accountancy module of the software. A list of questionnaire was prepared to collect reviews from Study Managers and Engineers of various organizations to evaluate the changes occurred after the application of ERP. The companies which are ready for huge investment provided they are adaptive to change in working system, ERP is the best solution for them as it would result in optimization of Resources, savings of Time, Money and most importantly Energy.

Yu-Cheng LIN Enterprise Resource Planning (ERP) is the latest high-end solution information technology has lent to business application. Enterprise resource planning 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. The paper identifies main success factors critical to a successful implementation. A summary of successful ERP implementation is presented based on lesson learned from the interviews with experts and discussed in terms of these key factors.

III. CONCLUSION

This paper focuses only on the literature review of previously published studies. The discoveries of this paper this study show the ERP technology, its origin, and its current development in general. Based on the needs of running a construction enterprise, ERP shows its potential for the construction industry. Through proper planning coupled with detailed needs analysis, suitable change management strategy, an experienced project team and selecting the appropriate software development process, any organization can design and develop ERP system that caters for the organization specific needs. A construction ERP system provides Cost optimization, incorporate design changes, Consistent quality conformance, Reliable, Faster and on time delivery, Incorporates value engineering, Collaborative work environment, team tracking facility.

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