A Study On Major Critical Success Factors During ERP Implementation Of Software Companies In Hinjewadi Area With Reference To Pune City

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Abstract—**This research work presents a completely survey of Software industries in Hinjewadi area with reference to Pune City. The focus is kept on their implementation packaged ERP system. The objective was to evaluate the information system performance. This paper finds and sorts out various critical factors of ERP during Implementation process. The aim of this study is to identify Critical Success Factors of ERP implementation. The research is tested with the data collected by questionnaires given to software companies in Hinjewadi area Pune city.**

Index Terms—**ERP, implementation, performance, factors.**

INTRODUCTION

In the past years, organizations have shifted from stand-alone business information systems applications to integrated and flexible enterprise wide information systems. The rise of Enterprise Resource Planning (ERP) systems has been the major event in the software industry in the 1992s. However, ERP systems are huge and complex. Execution of ERP always ensures successful implementation. They are not pure software systems; they affect how a business conducts itself [1]. The value that ERP applications can bring to companies is clear, and few will dispute its potential.

Many researchers' states that ERP systems are fully standardized systems, utilizing a single powerful database across the company. This means data should be standardized through the whole company. The outstanding advantages of ERP systems have led Companies to move toward adopting them; many have cited failures in ERP implementations [2].

ERP system is not only a software package to be delivered to an organization but also a set of knowledge that is used by knowledge employees [3]. It is essential to identify the existing knowledge and the required knowledge as well as to map a path to fill the gap between current and desired situation.

As we know, there are strong proofs that many ERP systems implementation projects are not completed on right time and within desired budget [4] There are reports of complete ERP implementation failure. Some of these problems may occur due to poor time and cost estimation and regular changes in project scope. ERP systems implementation projects are complex and careful planning is critical. The contributions of the paper are important for both researchers and practitioners. The critical success factors will provide a useful guide for multinational organizations planning to implement ERP systems. However, while some organizations have achieved their impressive benefits from ERP systems, others have experienced a lot difficulty in gaining the benefits what they expected exactly.

Among the most important characteristics of ERP Systems are its abilities are -

✓ To integrate an organization's business processes into one.
✓ To share common data and practices across the entire enterprise
✓ To produce and get information in a real-time environment

LITERATURE REVIEW

Some organizations have faced challenges undertaking ERP implementations, many others have enjoyed the benefits that the systems have brought to the organizations. ERP system facilitates the smooth flow of common functional information and practices across the entire organization. In addition, it improves the performance of the supply chain and reduces the cycle times. However, without top management support, having appropriate business plan and vision, re-engineering business process, effective project management, user involvement and training, organizations can not embrace the full benefits of such complex system and the risk of failure might be at high level. [5]

An ERP project (i.e. implementation) is large and risky undertaking. ERP implementation risks and critical success factors have been widely studied, mostly by post implementation research. Many of the risks relate to ERP implementation stakeholders such as system vendor, consultants and the ERP project team. Critical success factors relate, for example, to expertise, competence, co-operation, and communication. This indicates that increased user involvement

and multi-disciplinary interaction is needed to improve the ERP implementation success. [6]

METHODOLOGY

The high failure rate of ERP implementation calls for a better understanding of its critical success factors. Through an extensive study of literature review, it is found ten articles that provide answers to the question: what are the major critical factors for ERP implementation success? These ten articles were found through a key search of databases of published articles and conference proceedings in the area of Information Technology. The articles were searched by the title based on the following two criteria

(1) It must contain the keyword ``critical issues/factors''
(2) It should contain the term ``ERP'' or "ERP Implementation"

ERP IMPLEMENTATION PROCESS

The ERP implementation process concerns all aspects of implementation including developing the initial business case and planning the project, configuring and implementing the packaged software, and subsequent improvements to business processes. ERP implementation should therefore be considered a "business project rather than a technological initiative" [7]

Ross [5] proposed ERP implementation process model based on fifteen case studies of ERP implementation of major four phases. The phases are as design, implementation, stabilization, continuous improvement and transformation. The design phase is mostly connected with selection of ERP system, scoping the project and formulating the system architecture. The implementation phase contains configuring and implementing the software. After initial implementation, a stabilization period occurs when implementation problems are fixed out neatly and organizational performance graph improves. Ross notes that most of the organizations stay in the stabilization phase for many months or sometimes years. The continuous improvement of processes follows and finally major process transformation is enabled. Few organizations ever reach the transformation phase although most plan to. [8]
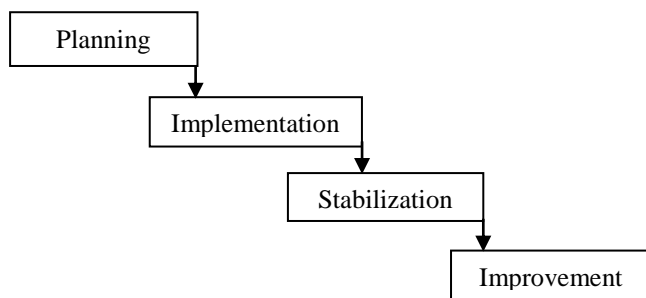

Fig. 1. Process Model for ERP implementation

I. STATEMENT OF HYPOTHESIS

H1: Success of ERP depends on top management involvement in ERP implementation

H2: Implementation period required for ERP is dependent on extent of training provided to user.

H3: ERP softwares available in market are inadequate to fulfill the requirements of software industry.

II. RESEARCH METHODOLOGY

The study will be inferential descriptive (diagnostic) in nature based on systematic collection, analysis, and interpretation of the data related to ERP.

Data Required:
To carry out the research, data related various ERP concepts, various ERP modules, present status of ERP implementation and problems observed in ERP implementation is required

Data Sources:
Both primary and secondary source will be used to collect the data for the research

Primary Data:
1. Present status of ERP softwares
2. Problems observed in ERP implementation process.

Primary data will be collected from technical staff and management peoples from selected units.

Secondary Data:
The necessary secondary data such as concepts of ERP will be collected from sources like documents, libraries, magazines, published reports, published sources such as journals, books, articles, Research papers, library and web sites.

Sampling
For deciding sample size, total population is divided into 3 stratums (viz. Small Scale, Medium Scale and Large Scale) according to capital structure mentioned as below-
✓ Small Scale : Less than Rs. 50 Lac
✓ Medium Scale: Between Rs. 51 Lac and Rs. 1 Crore
✓ Large Scale: More than Rs. 1 Crore

Proportionate Stratified Random Sampling method is used for calculating sample size.

Sr. No.	Category of Software Industry	Population (Number of Units)	Sample Size
1	Small Scale	11	02
2	Medium Scale	11	02
3	Large Scale	20	04
	Total	**41**	**08**

Sample Size:
(Source: Ministry of Company Affairs Records, Pune)

Census method is used for selecting the respondents from sample units. Primary data is collected from the members of steering committee and Chief Executives (CEOs) of sample units.

III. DATA ANALYSIS

A questionnaire addressing these CSFs (Table1) was designed and distributed among 300 members that were involved in ERP Implementation at four Iranian large companies1 and their ERP developers. 276 questionnaires were recovered while 250 were effective Six main identified factors were determined as follow

Sr. No.	Reference To Hypothesis	Critical Success Factors in ERP Implementation
01	H1	Top Management Involvement
02	H2	Implementation Plan
03	H2	Implementation Duration
04	H2	Proper Training and Education Programs
05	H3	Consulting firms and Vendors
06	H1	ERP Package Selection

(Table 1: Critical Success Factors)

No. (i=1,2,3)	p-Value	Result
Hypothesis 1	0.162	Accepting Hypothesis H1
Hypothesis 2	0.02	Accepting Hypothesis H2
Hypothesis	0.4	Accepting Hypothesis H3

(Table 2: Testing of Hypothesis)

According to Table 2, given that the essential significance level for the present study is considered equal to 0.05.

IV. IMPLICATIONS AND FUTURE RESEARCHES

This study's findings may help increase success of ERP system implementation in organizations. Results of the research could be useful not only for those organizations that have implemented ERP or are implementing it but also for organizations that intend to implement such system.

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