

## ENTERPRISE RESOURCE PLANNING ( ERP ) IN SMALL AND MEDIUM SIZED ENTERPRISE (SMES):

### An Exploratory Study in Marathwada Region.

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#### INTRODUCTION:

Information Technology and the development of information systems have changed the conduct of business all over the world. Till very recently, only large companies afford to own computers and to use them for few basic activities. In the present knowledge-based, dynamic and competitive business environment usage of application software for business solutions has become the prominent factor in shaping the organizational competency. The need for information and its application in business decision making has created a situation where organizations design, develop and implement a centralized system that integrates organization wide and/or inter functional activities that are essential for conducting business effectively. Modularized software approach to business management has substantially enhanced productivity in many areas of business through reduced costs, and increase efficiency.

Enterprise Resource Planning software systems (ERP) encompass a wide range of software products supporting day-to-day business operations and decision-making. ERP serves many industries and numerous functional areas in an integrated fashion, attempting to automate operations from supply chain management, inventory control, manufacturing scheduling and production, sales support, customer relationship management, financial and cost accounting, human resources and almost any other data oriented management process. ERP systems are designed to enhance organization's competitiveness by upgrading an organization's ability to generate timely and accurate information throughout the enterprise and its supply chain. A successful ERP system implementation can shorten production cycles, increases accuracy of demand for materials management & sourcing and leads to inventory reduction because of material management, etc. Moreover it can be used as a primary tool for re-engineering.

#### NEED FOR THE STUDY

Economic liberalization and globalization of business have compelled SMEs to equip themselves to face competitions not only among themselves, but with large industrial giants both from home and abroad. Therefore, SMEs are also in the race for improving productivity through IT solutions. The improved quality of information technology services and the reduced price of the computer have drastically made it possible even for small organization to think about ERP systems.

#### OBJECTIVES OF THE STUDY

1. To examine the impacts of ERP implementation on the performance of SMEs.
2. To suggest measures for effective implementation and usage of ERP in SMEs.

## RESEARCH METHODOLOGY

1. Secondary data for research was collected from related books, publication, annual reports, and records of organization under study.
2. Primary data has been collected through questionnaire-cum-interview technique. For this purpose questionnaire was created on already established models and survey of literature.
3. Data was collected on 5 point Likert scale depending on the relative importance of a factor.

### Statistical method and hypothesis development

The research method is basically an exploratory method blending survey type approach with it. An exploratory research is a “useful preliminary step that helps ensure that a more rigorous more conclusive future study will not begin with an adequate understanding of the nature of the management problem”. The reason for considering this research as an exploratory research is that till the time the research was finalized, there was not any research in the field of ERP in Marathwada city related to SMEs. The first step of the research was to find out the extent to which the ERP application has penetrated into the SMEs by conducting a telephone survey. Then, a questionnaire was developed by reviewing the researchers have been made in the related field. Therefore, a questionnaire was developed, designed on Likert Scale type question, while incorporating ERP system area, that is ERP system impact on SMEs after implementation. The factors are listed in the following tables.

**Table 1: ERP systems Impacts on SMEs after Implementation**

1. Increase Revenue	14. Reliable business forecast
2. Increase Customers	15. Customer profiting
3. Reduced costs	16. Increased market share
4. Reduced overhead	17. Business data storage/retrieval
5. Increased Efficiency	18. Improved communication with customers or suppliers
6. Increased Job opportunities	19. More secured business transactions
7. Enhanced Competitive advantages	20. Employees satisfaction
8. Better access to information	21. Increased responsiveness to customers
9. Prompt deliveries	22. Increased productivity
10. High quality of customer care	23. Improved delivery time to customers
11. Increased sales	24. Time maximization
12. Improved communication with staff	25. More familiarity with equipment
13. New products/service development	

Hence, while incorporating the important area of ERP impacts after implementation consisting of 25 questions. The available responses evaluated by liker Scale. The area that is, the ERP impact after implementation would be responses are Very High, Middle Low, and Very Low. The question are made according to the mentioned areas listed in the above tables and the same factors will be considered as the question of the questionnaire. For example, the first Null

Hypothesis and Alternate Hypothesis in the ERP impacts after implementation will be as follows:

Ho: The Company’s revenue did not increase after implementing ERP system.

H1: The Company’s revenue increase after implementing ERP system.

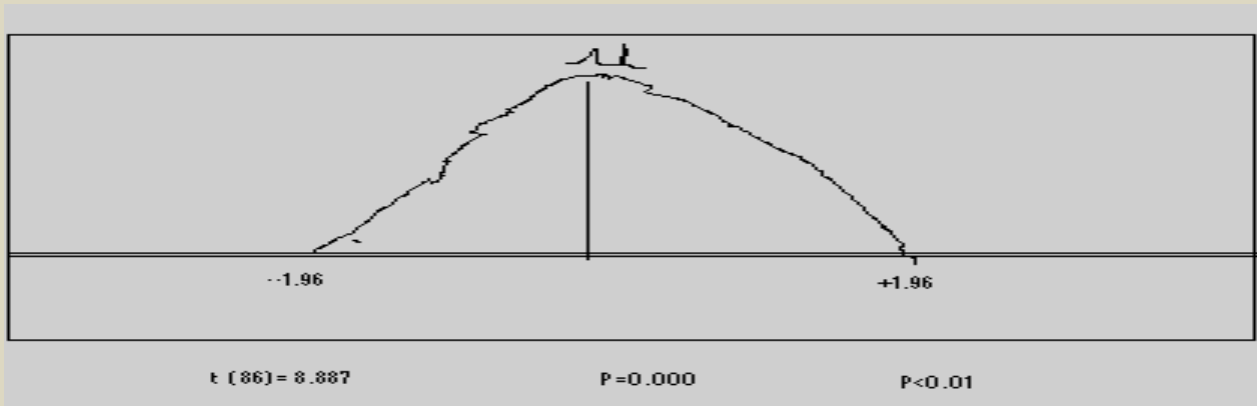
Therefore, each of the factors in the table will be a criterion of the research.

**HYPOTHESIS TESTING**

First, hypothesis, that is , impact of ERP on SMEs after implementation, including 25 question, indicates that ERP implementation has improved total companies situation in the areas mentioned. Hence, the null and alternate hypothesis is presented as follows:

Ho : Mean <= 3

H1 :Mean >= 3



*Figure :1 Areas under the standard normal probability distributions*

**Null Hypothesis** indicates that observed means is smaller than or equal to the hypothesis mean, in which case it means that null hypothesis is accepted and the impact is low to be considered, and alternate hypothesis indicates that observed mean is greater than the hypothetical mean, in which case the alternate hypothesis is accepted and the impact is important enough. The result gained from the sample group shows that the calculated observed value of t is 8.887 (t=8.887) is greater than the critical point, that is 1.96. In other words, it is similar than 0.05. Since t value is positive, the critical value is above the scale area. Hence the null hypothesis at the confidence level of 0.95 and 0.99 is rejected. Therefore, we can say that implementation of ERP system has improved the factors mentioned in the variable A, that is, impacts after ERP implementation. The result of this test is presented in following table.

Variable	Descriptive indices			Test Value = 3					
	Mean	Std Deviation	Std Error Mean	t	df	Sig( 2-tailed)	Mean Diff	95% Confi interval of the diff	
								Upper	Lower
Mean A	3.4421	.44298	.04749	8.887	86	000	.42207	.5165	.3277

## RESEARCH FINDINGS:

- In the present study, both manufacturing as well as service firms are included. Out of 87 SMEs, 60 of them are manufacturing firms, out of which 52 are medium sized and 8 are small sized firms. Others 27 SMEs are service companies out of which 20 are medium sized and only 7 are small sized companies.
- ERP implementation has made positive impacts on SMEs operations. Except Increased Market Share (IMS) all of the sub variable in this variable that is, the impacts of the ERP system on SMEs after implementation have mean values more than hypothetical mean, that is 3. SMEs under study do not believe that their market share has increased after ERP implementation. Yet, the SMEs implementation ERP system are fairly satisfied with the ERP systems and they believe that 24 variables out of 25 showed positive sign after ERP implementation. The Friedman Mean Rank of the 25 sub variables was calculated.

The highest rank is given to the increased revenue, the second highest rank is given to the more familiarity with the equipment, the third rank is given to the business data storage/retrieval, the fourth rank is given to the better access to information and the fifth rank is given to the prompt and so on. The last rank is given to the increased market share hence, in Marathwada except increase market share, all of the positive changes were observed while implementing ERP system and the ERP system has had positive impacts on the SMEs.

## SUGGESTIONS

The objective of this research is to identify the challenges organizations face while implementing ERP and to suggest strategies that can help them to overcome hurdles and to conduct their business more effectively than before with usage of ERP software packages. Therefore, few suggestions are offered based on the inferences drawn on the data analysis and interpretation.

- The effective implementation of ERP requires a systemic project management. Therefore, while going for ERP implementation it is advisable to constitute a project team consisting of members both from internal and external agencies.
- The knowledge transfer in ERP implementation is itself turn to be a barrier for effective implementation, unless it properly transferred. Therefore appropriate training for both who transfer and receive the knowledge is to be given. It is necessary to create an appropriate environment in the process and facilitate the smooth exchange of views and effective learning.
- Implementation of ERP depends on the involvement of every member in the organization, hence, the business activities that are essential for the implementation are considered in the study. There are ten such activities indicates in the study, out of which the most important ones are the interaction of the information system staff with the

members in the other functional departments and the collection of information about the latest application and business needs of ERP. Therefore attempts must be made to bridge the gap between the implementing staff and others in the organization by creating awareness for the regular meeting, interaction and discussion.

## BIBLIOGRAPHY

1. Alexis Leon (2008) , “ERP Demystified”, Second Edition 2008, Published by Tata McGraw-Hill Publishing Company Limited.
2. Ashim Raj Singla (2005), “Impact of ERP systems on small and mid sized public sector enterprises”, Journal of Theoretical and Applied Information Technology, pp 119-131.
3. Daniel E. O’ Leary (2002) , “Enterprise Resource Planning Systems System , Life cycle, Electronic Commerce & Risk “ Second Edition 2002, Published by Cambridge University Press.
4. Geogre L. Hodge (2002) “ Enterprise Resource Planning in textiles”, Journal of Textile & apparel technology and management, Vol. 2, issue 3,pp 1-8.
5. Wen-Hsien Tsai, Shu-Ping Chen, Elliott T.Y. Hwang & Jui-Ling Hsu (2010),” A Study of the Impact of Business Process on the ERP System Effectiveness”, International Journal of Business and Management Vol. 5, No. 9; pp. 26-37.