A STUDY OF ERP AS A CHANGE MANAGEMENT TOOL IN MANUFACTURING COMPANIES

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ABSTRACT

Manufacturing Companies today are constantly in search for ways to achieve better business performance and sustain competitive advantages through effective deployment of resources and business processes. To improve business performance, Manufacturing Companies require an efficient planning and control system that synchronizes planning of all processes across the industry. Enterprise Resource Planning (ERP) provides a centralized framework for all data and processes of an industry. It integrates all aspects of a business from planning to inventory control, manufacturing, sales, marketing, finance, customer service and human resources. Manufacturing Companies undertake ERP implementations to achieve tangible benefits including a significant return on investment. Accordingly the most common benefit of Manufacturing Company is for an increase in response time due to better availability of information. Another common benefit is increase in interaction across the company, integration of business operations/processes, improved interaction with customers, reduced direct operating and labour costs, reduced IT maintenance costs, improved lead-time, improved inventory levels and improved interaction with suppliers. A study was undertaken to assess impact of ERP as a Change Management Tool in Manufacturing Companies. This article presents the key findings, conclusions and suggestions.

On an overall basis the study has clearly demonstrated that ERP works as a change management tool in manufacturing companies. This, however to happen, calls for adoption of certain factors that facilitate the change management process. ERP is a major transition from legacy systems to an integrated platform. Such transitions are not easy. However, if the CSFs are duly taken care of, the implementation can be successful and beneficial in terms of tangible results both at the macro and micro level. At the same time companies need to take care of the gaps in the ERP implementation.

Key words: Change management, Enterprise Resource Planning, Manufacturing Companies

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1. INTRODUCTION

Improving access to data and interactions with other stakeholders helps manufacturing companies to determine whether they are producing in profits or in losses. Efficiencies related to people, machines and materials determine the appropriate adjustments to eliminate quality defects or delayed customer shipments. Similarly, if there are issues with production systems, it is equally important for Manufacturing Companies to be able to notify the appropriate organizations, so they can make corrections, whether it's reporting a quality defect to a supplier or notifying a customer of a late shipment.

Although ERP was originally designed for the Manufacturing Industry, manufacturing companies have no clear advantage over other industries when it comes to business benefits and return on investment. The first step for achieving ERP success in the Manufacturing Industry is to develop a business case that includes goals and objectives from which your organization can benchmark actual outcomes. Then your organization can tackle the unique challenges that come with implementing and integrating the specific modules that support your manufacturing processes.

ERP is a change management tool that has been used by companies across the world to rationalize and integrate their processes. Organizational processes were functioning in a stand-alone, silo mode. However, this type of working created serious problems of coordination, duplication, delays and dissatisfaction. Hence ERP came into the picture as a solution to seamlessly integrate things so as to make the processes smoother, quicker, leaner and robust. The data collection, storage and processing capabilities of ERP are huge and can benefit the organization not only in terms of descriptive and prescriptive analysis but can also provide ground for predictive analysis.

A study was undertaken to assess impact of ERP as a Change Management Tool in Manufacturing Companies. This article presents the key findings, conclusions and suggestions.

2. LITERATURE REVIEW

ERP has been defined in many different ways by researchers and practitioners. (Minahan, 1998) Defines ERP as a "multifaceted software system that links together and systematizes the basic processes of a business". ERP has been defined by various authors but with few changes.

(Kumar, 2003) Define enterprise resource planning (ERP) systems as "configurable information systems packages that assimilate information and information-based processes within and across functional areas in an organization"

(Al-Mashari M. Z., 2000) States that ERP represent an optimal enterprise-wide technology infrastructure. The elementary architecture of an ERP system builds on one database, one application, and amalgamated interface across the entire enterprise.

(Nah & Kuang, 2001) defines ERP as "An enterprise resource planning (ERP) system is typically defined as a packaged business software system that facilitates a corporation to manage the efficient and effective use of resources (materials, human resources, finance, etc.) by providing a total cohesive solution for the organization's information processing requests, through a process-oriented view consistent across the company."

(Wallace, 2001) describes ERP as an enterprise- wide set of management tool that poises demand and supply, containing the ability to connect customers and suppliers into a complete supply chain, employing proven business processes for decision making and providing high degree of cross functional integrations among sales, marketing, manufacturing, operations, logistics, purchasing, finance and new product development and human resources, thereby enabling people to run their business with high level of customer service and productivity and

simultaneously lower cost and inventories; and providing the foundation for effective ERP implementation.

One of the principal folly in ERP implementation is that the top management including the CFO postulate that the aspect of change management can be disregarded and is an unnecessary expense. They often flop to appreciate the impression of ERP implementation on business process and job tasks of end users. This assumes a larger proportions in global organizations where in the gage of business and the multi culture dimensions demand a far greater attention by the top management in ERP implementation. As ERP influences all aspects of an organization, a carefully crafted change management is imperative. The change management should contain 5 components comprehensiveness and representatives of all stakeholders, cultural considerations, employee engagement, communications and training. (Solutions, 2016)

A mutual problem confronted by management in ERP implementation is resistance from workers and hence it would be prudent on their part to be accommodate the view points of stakeholders rather than antagonizing them. Hence adoption and execution of ERP presents an exclusive opportunity for the top brass to initiate change management through dialogue. The authors suggest that the ERP adoption and implementation should be process rather than an activity. The changes should be accompanied in regularly starting from communication with the stakeholders informing them about the inputs and outputs after the ERP implementation. The authors further directs the top management to refrain from introducing ERP till a auspicious attitude or perception is developed amongst the stakeholders. (Aladwani, 2001)

Enterprise resource planning (ERP) system is a business management system that includes integrated software, which can be used to manage and integrate all the business functions within an organization. It typically include business applications and tools for several business functions such as finance, cost accounting, marketing, human resource, production planning and other perilous functions such as production and customer relationship to name a few. (Boykin, 2001) ; (Chen, 2001) ; (Yen, 2002)

3. FINDINGS

3.1. Descriptive characteristics of sample

- Out of the 400 respondents, 133 were Executives and 39 were Managers. Rest 228 belonged to non-Executive and Non-Managerial cadre.
- Taking average age at mid-points for the age-groups, the weighted average age of the sample was 34 years. (13590/400). This represented a reasonably matured sample.
- Almost 2/3rd of the sample size was represented by male employees whereas 1/3rd was represented by female employees.
- Vast majority (347 out of 400 or 87%) of the respondents were users of SAP ERP system, followed by 30 users of Oracle and 23 of others.
- Taking average period mid-points for the work experience groups, the weighted average work experience of the sample was 7.3 years. (2890/400). This represented a reasonably experienced sample.
- Barring HRM module, the users were distributed fairly equally amongst other domain areas of SD, PP, FICO, MM and Mix. For HRM module the number of respondents were 48 or 12% of the sample size.
- Almost 62% of the respondents were educated up to Post-Graduation level. Further another 80 reported to have obtained specialized training in IT.

- Taking average period mid-points for the ERP work experience groups, the weighted average ERP work experience of the sample was 7.62 years. (3045/400). This represented a reasonably experienced sample in terms of ERP usage.
- 46% of the respondents belonged to companies who had employees in count of 100-500. 40% belonged to companies with more than 500 employees whereas 14% belonged to companies with less than 100 employees.
- 64% of the respondents belonged to companies who had sales turnover in the group of > 500 crores. 31% belonged to companies with sales in the range of 100-500 crores whereas 5% belonged to companies with less than 100 crore turnover.

3.2. Inferential findings

- An overwhelming 83% of the respondents on an average said that there has been an impact of ERP that was measurable over 10 areas.
- 51% of the respondents felt that there are gaps in ERP implementation over the five aspects of utilization of ERP, technical skills, managerial skills, confidence with results and updation.
- At the same time interestingly only 32% of the respondents felt that there are gaps in the five key domain areas due to implementation of ERP.
- A sizable majority of the respondent 68% agreed to micro level benefits from implementation of ERP. These included things like improvement in man and machine productivity, reduction in wastages, etc.
- On an average 74% of the respondents have agreed with the 10 critical success factors for implementation of change management. On an individual level, the factors fetched more or less equal criticality ratings.

3.3. Findings from finer data analysis

- Designation and Avg.III, Age and Avg.III, Period of ERP and Avg.II(ii) and Number of Employees and Avg.II(ii) showed significant correlation. These were -0.25, 0.78, -0.82 & -0.46 respectively. The correlation of -0.25 between designation and Avg.III indicated that employees belonging to the non-managerial and non-executive cadre perceived less benefits at the micro level. On the other hand employees belonging to the managerial and the Executives cadre perceived higher benefits of ERP. A correlation coefficient of 0.78 between age and Avg. III indicated that elderly employees perceived larger benefits from the ERP as compared to younger employees. A correlation coefficient of -0.82 between period of ERP implementation and Average II(ii) indicated that higher the period of ERP implementation lower was the perceived gap in the domain areas and lower the period of ERP implementation higher was the perceived gap in the domain areas. The correlation coefficient of -0.46 between number of employees and gap in domain areas indicated that organizations with lesser number of employees perceived a higher gap whereas those with higher number of employees perceived a lower gap in the domain areas.
- Other demographic factors didn't show any significant relationships with the responses.

4. CONCLUSIONS

- The impact of ERP as a Change Management Tool in Manufacturing Companies is definitely there as is evidenced from the assessment of the changes in the outcomes. A wide range of outcome variables were selected for measurement of the impact of ERP ranging from overall revenue to controlling function. In all these areas, the positive impact of ERP has been clearly agreed to by the ERP users. Not only the impact was agreed to on overall basis but even at individual levels, the positive impact was affirmed by the users.

- Almost half of the users were of the opinion that there have been gaps in the implementation of ERP. These gaps were in the nature of underutilization of ERP, gaps in technical and managerial skills etc. Thus, ERP implementation blues are a problem for organizations. However, gaps were denied with respect to specific main domain areas. Thus, one can conclude that technical problems are felt more than specific functional issues.
- Benefit evaluation of ERP showed a highly positive feedback. Micro-level benefits like man-machine productivity, reduction in wastages, increased customer satisfaction etc. were confirmed by the users. Thus, one can conclude that the benefits of ERP have been acknowledged and accepted at both macro and micro levels.
- The ten factors identified as CSFs for implementing the change management through a tool like ERP were largely accepted by the users. This leads us to conclude that there are factors that need delicate and diligent handling to ensure that change management is pushed through with ease and comfort.
- An interesting conclusion that emerged from the finer data analysis was that it takes time for organizations to reap the full benefits of ERP system. This conclusion is based on the negative correlation between years of ERP implementation and perceived benefits. ERP definitely is a long-term and strategic initiative and hence does require time to yield results.

5. SUGGESTIONS

Following suggestions are offered in the light of the findings and conclusions of the study –

- The planning stage of the ERP warrants more application. Analysts at times are unrealistic about the utilization potential of the ERP and overestimate the requirements. This leads to underutilization of the system. At times modules that may not be used at all are installed assuming that they would be used in the future. When facilities to add-on modules as and when required are available, planners should be conservative and realistic while planning the requirements. ERP systems calls for sizable investments and the amounts invested should not remain unused.
- Training needs to be improved. At times users show complacency by using those applications that serve the bare minimum requirements. The tendency is to somehow keep the show running. Here if the users are given good training then they will be motivated to try for more sophisticated and analytical use of the ERP system.
- Special training should be imparted to improve the predictive data analysis capabilities using the ERP. The ability of the ERP to capture vast amount of data should be exploited to the maximum extent possible to build sophisticated predictive planning and forecasting models. This stretching beyond descriptive and prescriptive analysis is a must and organizations should try their best to move towards predictive analysis as well.
- Updation facilities need to be improved. For example there are major changes due to legal and environmental changes like the one that happened with the implementation of GST in India from July 2017. Such changes should be incorporated in the system in a timely and in an efficient manner.

On an overall basis the study has clearly demonstrated that ERP works as a change management tool in manufacturing companies. This, however to happen, calls for adoption of certain factors that facilitate the change management process. ERP is a major transition from legacy systems to an integrated platform. Such transitions are not easy. However, if the CSFs are duly taken care of, the implementation can be successful and beneficial in terms of tangible results both at the macro and micro level. At the same time companies need to take care of the gaps in the ERP implementation.

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