

## Gaining Competitive advantage by adoption of Small and Scalable ERP: Experiences of Indian SME

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*Abstract: ERP software product purchasing is a costly and risky process. From this aspect, it is critical to make this project successful for an organization. For this the right solution should be selected and after selecting it this software package must be used effectively. To elaborate this statement this paper examines by the secondary data implementation of MBS- Navision at one of the automotive SME Company located at Mumbai which is a major player in the retread tyres space, selling tyres for auto rickshaws, cars, LCVs, trucks and tractors. The company has three factories, 250 employees and a turnover of Rs. 16 crores. This company was looking for aggressive growth and expansion for which this company was looking for an enterprise wide ERP solution which could meet all its needs, This Company was also concerned with its high tyre rejection ratio and wants to lower it so as to make the business more profitable. After considering various alternatives and standard packages that were available in the market the company opted for Microsoft Business Solutions and the important issue here is what made the company to go for this ERP solution and if the solution implemented was able to satisfy its expectations or not .*

*The importance of this study is that this study is very useful for other SMEs that can not afford to invest large sums of money in the implementation of big packages. The results of this study would highlight if the present company in the business was able to reap the necessary benefits and if the investment in Microsoft Business solutions was justified and fill the requirements and expectations with which it was implemented. The findings of this case study would be generalized to other SMEs where the SMEs, are under pressure to implement suitable ERP package to fit their needs facing tight budgetary constraint making it difficult for them to go for bigger packages like SAP. All data in this study is taken form secondary sources.*

Key words :

ERP, Literature review, Organisation effectiveness, benefits of ERP, Microsoft Business Solutions.

### INTRODUCTION

Palaniswamy and Frank in 2000 stated that ERP systems emerged from advanced manufacturing technologies with the aim of increasing quality, lowering down inventory levels, improving customer service and manufacturing flexibility. According to Gupta in 2000, MRPII appears as critical component of complete ERP system and year 2000 problem, currency consolidation, integration of all business functions and processes, and internet interface acted as additional motives for companies to adopt ERP systems .

The main motive for implementing ERP system is automating business processes, sharing common data across the organization and generating real-time data. End of the 1990s, witnessed many big companies going for ERP implementation and on IT investment and since ERP implementation is complex and extremely expensive, top managers who either have implemented or want to implement ERP systems are always keen to know the impact of ERP on effectiveness of the organization on various parameters like profit and loss statements, improvements generated along various dimensions of performance (Jonas Hedman and Andreas Borell 2003).

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Anderson & Nilsson in 1996 stated that the impact and benefit of ERP systems is not well known and it is very resource consuming. Davenport in 1998 opined that the ability to determine the impact of ERP systems is crucial from both theoretical and practical perspective which is difficult for several reasons like: It is not possible to draw explicit conclusion from the IS benefit research on the benefit of ERP systems. (DeLone & McLean, 1992). There are inconsistent and contradictory findings from research on information technology and organizational change (Robey & Boudreau, 1999). Interdependency between ERP systems and organization requires interpretive and holistic evaluation methods (Borell & Hedman, 2001). Measurement of organizational effectiveness is an elusive, complex and socially constructed construct (Campbell, 1977). Lastly there is a lack of theorizing regarding the IT-artifact (Orlikowski & Iacono, 2001). Thus as suggested by Markus and Tanis in 1999 for both researchers and executives one of the fundamental and important question is will investment in ERP pays off well ?

Present paper attempts to evaluate the over all impact of Microsoft Business solution on this company. The results of this study are important from the point that it would highlight if the present company was able to reap the necessary benefits and if the investment in Microsoft Business solutions was justified and fill the requirements and expectations with which it was implemented. The findings of this case study would be generalized to other SMEs where the SMEs are under pressure to implement suitable ERP package to fit their needs facing tight budgetary constraint making it difficult them to go for bigger packages like SAP.

This paper selection and prerequisites for successful ERP implementation and subsequent section deals in organisational background and issues at hand that this organisation is facing, Solution and overview of the solution that was implemented, Benefits obtained, Hardware used and finally ends with the conclusion

#### LITERATURE REVIEW ON ERP

Enterprise resource planning (ERP) systems are commercial software packages that enable the integration of transaction-oriented data and business

processes throughout an organization (Markus and Tanis in 2000) Companies collect store and disseminate voluminous data. Information in company is spread across large number of isolated computer systems, housed in an individual function, business unit, region, factory or office (Davenport, 1998). Enterprise resource planning (ERP) systems integrates the information for decision support. ERP systems automate core corporate activities of manufacturing, human resources, finance, supply chain management etc. ERP system help the companies to achieve many improvements pertaining to relevant and reliable information, elimination of redundant data and operations, reduction of cycle times, increased efficiency hence reducing costs. In today's hypercompetitive environment ERP has become very useful tool to remain ahead of competitors and determination of the ERP Package selecting criteria has also gained a crucial role because of all these reasons as any wrong selection may not deliver the appropriate benefits. As studied by Davenport in 1998 although ERP systems can bring competitive advantage to organizations, the high failure rate in implementing such systems is a major concern (Davenport, 1998) and If the right ERP solution is selected, it can be an excellent decision support tool that will provide a competitive advantage (Mabert et al, 2000) and appropriate ERP solution should be able to support decision-making (Liang and Hung, 1997; Chung and Chik, 2001).

A number of prominently publicized failures have underscored the frustrations and even total meltdowns that enterprises go through in implementing ERP systems. Allied Waste Industries, Inc. decided to pull the plug on a \$130 million system built around SAP R/3, while another trash hauler, Waste Management, Inc., called off an SAP installation after spending about \$45 million of an expected \$250 million on the project. Hershey Food Corp. has also held SAP accountable for order processing problems that hampered its ability to ship candy and other products to retailers around the peak season (Boudette, 1999).

The process of selecting an ERP system needs also to be staffed correctly to ensure the inclusion of diverse stake-holders within the organization. As has been argued (Hammer and Champy, 1993; Davenport, 1993; Appleton, 1997; Montazemi et

al., 1996; Willcocks and Sykes, 2000), the participation of the people affected by the system and knowing the business processes leads to better decisions and a higher rate of acceptance later on (Guha et al 1997). In Tayler (1998), possible benefits arising from this type of team structure include the motivational improvement of local participation and attention to individual quality of working life, as well as the necessary attention to strategic purpose and to reciprocal and coordinative social roles. Therefore, the groups involved in the selection process should also be analyzed.

After narrowing down the correct ERP fitment for the company, selection of right ERP provider is also very important. Which can be done after looking the past track record of ERP provider and talking to various clients that this ERP provider served in the past, Choosing a right ERP provider must be as if selecting long term partner after carrying the internal need assessment, the next step is to assemble the team to provide the best ERP solution. In this stage the first decision facing the team is whether to purchase integrated or best-of-breed solutions (Hecht, 1997). Most of the manufacturing firms prefer an integrated solution. For American manufacturing companies the rate using a best-of-breed ERP solution is only 3.9 per cent (Mabert et al., 2000).

#### PROBLEMS ENCOUNTERED IN ERP SELECTION AND PREREQUISITES FOR SUCCESSFUL ERP IMPLEMENTATION :

According to researchers some of the problems encountered in the ERP implementation process are following like - technical factors (Scott and Kaindl, 2000; Siriginidi, 2000a; Lang et al., 2001; Light et al., 2001; Themistocleous et al., 2001), softer factors for ERP system success such as organizational culture (Al-Mashari and Zaire, 1999; Stefanou, 1999; Aladwani, 2001; Krumbholz and Maiden, 2001). Substantial cost and time overruns, organizational problems including employee resistance to change also appear important barriers for ERP system success (Themistocleous and Irani, 2001; Themistocleous et al., 2001).

Some of the critical success factors for implementing successful ERP solution are appropriate Business process re-engineering along with the appropriateness of business and IT legacy

systems, healthy management culture, top management support and communication (Gupta, 2000; Al-Mashari and Zairi, 2000).

In the study conducted by Yongbeom Kim, Zoonky Lee, Sanjay Gosain (2005) it was find out that most of critical impediments are from functional coordination problems related to inadequate support from functional units and coordination among functional units, the project management related to business process change, and change management related to resistance of users. Studies of ERP implementations, combined with findings from earlier work on reengineering and change management, point to some of the areas in which critical impediments to success are likely to occur. Human resources and capabilities management, cross-functional coordination, ERP software configuration and features, systems development and project management, change management, and organizational leadership are significant factors (Davenport, 1998; Holland and Light, 1999; Parr *et al.*, 1999). Looking at these factors broadly in area of Human resources and capabilities management due to inadequacy of in-house expertise, enterprises have turned to outside consultants so as to facilitate the ERP implementation process (Piturro, 1999) and in such scenario management of in-house and external human resources in a coordinated process is critical for success (Ross, 1999). Another impediment related to this area is lack of user training and failure to completely understand changing of enterprise applications; e-business processes is also an impediment to successful implementation (Markus and Tanis, 2000).

In Cross-functional coordination implementation process requires proper coordination across different functional areas along with external project members (Shanks *et al.*, 2000; Summer, 1999). The problem of coordination is major reason causing failure to number of ERP implementations (Kumar and Van Hillegersberg, 2000). Cross-functional coordination may be enabled by project management structures such as a "steering committee", consisting of senior management from different corporate functions, senior project management representatives, and end users as a means of ensuring appropriate involvement (Slater, 1998). Lack of proper coordination may result in implementation delays and organizational conflicts,

on the other hand piecemeal implementations can negate the very purpose of an integrated package. In ERP software configuration and features may be configured to more closely fit an enterprise's structure, business practices and workflow (Chalmers, 1999). Configuring the system involves making compromises and has limitations, given the adaptability of the software and the effort involved (Davenport, 1998). The fine-tuning of the standard system is a key process in the implementation and requires translating business needs into appropriate parameter settings. In Systems development and project management implementing an ERP system is a careful exercise in strategic thinking, precision planning, and negotiations with departments and divisions that requires careful selection and the appropriate project management structure and methods (Bingi *et al.*, 1999). Given that most customers find that at least 20 percent of their need functionality is missing from a typical package (Scott and Kaindl, 2000), systems development impediments may be critical. Further, novel combinations of hardware and software as well as a wide range of organizational, human and political issues make ERP projects inherently complex, requiring significant project management skills (Ryan, 1999).

In Change management effective change management is critical for implementations of technology and business process reengineering Any IT-enabled transformation requires a comprehensive approach toward the large-scale process and system changes associated with ERP implementations (Markus and Benjamin, 1997). Without appropriate change management processes, enterprises may not be able to adapt to the new systems to make performance gains. Organizational leadership is very important in developing and promoting a vision for the enterprise's IT infrastructure and the role of the ERP system. Leaders need to keep abreast of progress and make adjustments to organizational systems and processes which are necessary to shape the implementation. An organizing logic for the IT activities in line with the enterprise's strategic objectives needs to be developed and articulated (Sambamurthy and Zmud, 2000).

#### ORGANIZATIONAL BACKGROUND

This company is a major player in retread tyre business in India with four factories with an

annual turnover of Rs. 16 crores (US \$ 3.55 Million) in and it is the only ISO certified retreading unit in India, it 2003-04 moulds to retread radial OTR tyres to Michelin specifications. Tyre Soles wanted to expand its business to become a one-stop-shop for complete tyre solutions. To do so, the company needed to reduce tyre rejection ratio, a key performance measure. To minimize wastage and pilferage, the organization needed a solution that would effectively track production, despatch, inventory and sales.

#### MORE ABOUT THE ORGANIZATIONAL BACK GROUND

This company has its head office in Mumbai from where this company monitors and controls activities of all its four factories at Belgaum, Silvassa, Goa, Pune and New Mumbai. Every year, this company retreads more than one lakh tyres, and consumes more than 1000 tones of tread rubber making it the single largest retreader in the industry. The factories retread tyres for cars, LCVs, trucks, tractors and earth movers using the conventional hot and precured process. This company has total employee strength of approximately 250 and dealer strength of over 100 mainly in the districts of Maharashtra, Silvassa, Daman, Vapi, Valsad and Surat districts of Gujarat. Besides this, the company has a strong marketing division in Mumbai. The company has contracts with various government agencies like the State Transport Undertakings, BEST (Brihan Mumbai Electric Supply and Transport), Air India, Indian Airlines, BARC (Bhaba Atomic and Research Centre) and companies from other Public and Corporate sectors

This Company's USP is that it can retread the widest range of tyre sizes and can repair radial tyres and specialize in carrying out tubeless repairs, and through German Technology, The company also offers several value added services, parallel to retreading like -

- Vehicle checking and tyre inspection for fleet owners
- Free vehicle parking and tyre replacement for drive-in customers
- Six-hour service for factory-direct customers
- Standardized product and services with online billing across the factories

## ISSUES FACED BY COMPANY

The company had a basic IT solution using a FoxPro based accounting package to generate invoices and track receipts etc and collation of inputs from all locations carried out manually. Information was usually sent on a floppy disk which was then entered into the database.

To compete with the unorganized sector, company needed to expand its network of factories. The head office in Mumbai used to rely on the manufacturing plants to provide accurate and timely information. This was not always possible as there were connectivity issues between the factories and head office. Also, the manual process led to inaccuracies. As explained in the words CEO of present company "Often this led to wrong forecasting or business commitments based on inaccurate information,". Apart from this, the management faced the challenge of remotely policing the sales and production team for accurate reporting.

Another impediment to growth was the high tyre rejection ratio, a key performance measure. This basically translates into higher costs, putting pressure on the margins. To improve the overall business processes and increase profitability to support growth plans, company decided to go for a technology solution. However, CEO was having the dilemma which is being expressed in the words of CEO himself like "We were too small to implement a large-scale ERP such as SAP, however, we did require a comprehensive business solution to manage our requirements,"

## SOLUTION AND ITS OVERVIEW

After weighing out various options the company realized that Microsoft's Business Solution - Navision would meet its business requirements as it has relatively lower cost of acquisition, apart from the confidence of the implementation partner of delivering the solution to meet all existing business requirements without under going change in the existing processes, boosted the confidence in the solution and with this Navision was implemented at all 5 locations. The financial accounting, sales, inventory, purchase, basic and advance dimensions were deployed. It was found that Microsoft Business Solutions - Navision could meet unique requirements of the retread tyre business by

implementing minor customizations. Microsoft Business Solutions, is a division of Microsoft, which offers a wide range of integrated, end-to-end business applications and services designed to help small, mid market and corporate businesses become more connected with customers, employees, partners and suppliers. Microsoft Business Solutions' applications optimize strategic business processes across financial management, analytics, human resources management, project management, customer relationship management, field service management, supply chain management, e-commerce, manufacturing and retail management.

The solution deployment of Navision across the five locations took approximately three months. This included the customization required by the customer. However, there was a connectivity issue which delayed the project completion. Company invested in VSAT connectivity for all locations. This would enable the management team at Mumbai to have snapshot views of all business needs 24 by 7. However, the VSAT connectivity took a few months to be set up and provide stable connectivity. The solutions were run in parallel for only one month. The balance from the previous solution was brought forward into Microsoft Business Solutions - Navision, and hard copies of data from the old solution were kept for reference.

## BENEFITS OBTAINED

Present business dramatically improved with the availability of information, an online end-to-end solution in terms of real time information, better control and improved customer satisfaction, Low maintenance and low total cost of ownership with a sound technological frame work.

*Real Time Information* - This was a key objective that has been met. Company's management wanted a snapshot view of outstanding payments, pending orders and factory capacity planning etc. With Microsoft Business Solution - Navision, the company is able to get the data and analyse it using the dimensions module's features. "We are able to monitor the performance, and react to trends more efficiently," commented CEO. The company has access to real time information on production status, inventory and sales from all its manufacturing facilities.

*Better Control* - Earlier, Company relied on its manual system to track orders, items and warranties. This was a time consuming process and often led to inaccurate information dissemination. This has been completely eliminated from the organization. Also policing a staff of 250 people to ensure that there were no invoices or receipts that were incorrectly billed or under billed consumed a large part of the management's time and energy. With Microsoft Business Solution Navision, this has been completely eliminated.

*Improved Customer Satisfaction*- Company has contracts with companies, PSUs and the Government agencies, apart from trucking companies. To meet its customers' orders, the company needed to plan its production capacity effectively, have a clear picture of the stocks and inventory. Armed with this information, the management is able to provide better service to its customers leading to a distinct improvement in customer satisfaction.

*Eliminating Human Errors* - Company is able to track each tyre from the production batch to the customer along with its warranty details. These processes were run in semi-manual fashion earlier, which led to loss, pilferage, wrong billing or discounting. This has been eliminated. "We believe that we will see higher productivity and profitability with the current implementation," claims CEO of the company.

*Low Total Cost of Ownership* -Our initial investments have been low because the solution acquisition cost was low. Also, since the front end is the familiar Office suite, it required limited training for our staff. "Another advantage that we see with this solution is the low maintenance requirements. Therefore, we believe this solution offers us the lowest TCO," explains CEO.

*A Technology Framework*-Company now has a technology framework that can be used to add new functionality, use decision support tools or new applications.

*Future Plans*- Company has been able to achieve all its objectives from the implementation of Microsoft Business Solutions - Navision. "The success of this project has been very encouraging. In fact, we are looking at implementing new modules in Customer Relationship Management (CRM) to

provide new value added services to our customers," elaborates CEO of the company.

The company also plans to add more users at the existing locations. Buoyed by the success, Company is expanding its network of manufacturing locations. With the help of implementation partner, it can create the IT infrastructure at a new location almost instantly - in a matter of days. Microsoft Business Solutions - Navision has given company the freedom to scale horizontally and vertically to support business growth.

*Software* - Windows Server 2000, Microsoft Business Solutions, Financial Management, General Ledger, Purchases & Payables, Sales & Receivables, Inventory Management, Basic and advanced dimensions.

*Hardware* - Dell Server, Pentium II, Pentium III and Pentium IV, HP Tape Backup drive

## CONCLUSION

We see in this study how Type Soles got benefited by deploying low cost ERP solution with out going for the so called best practices and as pointed out in the academic literature review it is not necessary that going for big ERP and adopting best practices would always give you the best results, the results of this study may be beneficial for companies facing similar type of situations as faced by Type Soles.

Bottom line of this study is that every buying organization needs to assess the situation based on its own environment, infrastructure, and long-term goals. Just as there is no "right" or "wrong" answer, there is certainly a "most appropriate" answer for each group. Companies should analyze and weigh individually all of the evaluation criteria and considerations according to the requirements and the budget of the company and go for most appropriate solution accordingly.

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