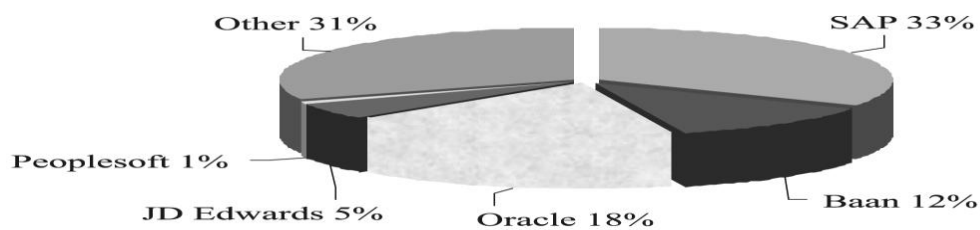


4. COMPARATIVE STUDY OF EXISTING ERP VENDORS

4.1 INTRODUCTION

ERP Vendor Selection process can be a very complicated and problematic for SMEs if they don't know how to approach it from the very start. This chapter presents a number of quantitative and qualitative analyses to compare major ERP software vendors over a period span of 2005 to 2013. Inherently vendor selection is a multi-criteria problem for small & medium enterprises (SMEs). In most organizations, purchasing department commands a significant position since purchased raw material and supplies typically represent 40 to 60 percent of the sales of its end products. Even a little reduction in price will have much impact on profits. Clients can have different needs in terms of budget constraints, technical or functional requirements of the products. These variables influence not only the choice of vendor, but also the choice of specific solution offered by the vendors.

This section compares the high-level characteristics of the vendors and details their competing products and technologies. It helps in analyzing one's business requirements, search for prospective vendors, and lead the team in selecting the winning vendor. Consequently, they have a large and direct impact on the cost, quality, technology and time-to-market of new products. It also provides the insight on contract negotiations and avoiding negotiation mistakes. The analysis is summarized based on all solutions offered by these vendors and does not target specific industries. The intent of this study is to provide an independent and balanced comparison of the ERP market's leading software providers like SAP, ORACLE, Microsoft Dynamics or any other software vendor or reseller[147].



Source: Mabert *et al.* (2000); Coffey *et al.* (2000); Everdingen *et al.* (2000)

Figure 4: Comparison of ERP Vendors [Source: 147]

When a company considers acquiring a new ERP system, they often struggle with clearly defining the evaluation criteria advises clients' to start with five basic criteria:

- 1) Function fit
- 2) Technology
- 3) Company
- 4) Support
- 5) Cost

ERP team personnel can inflate the list later on. Most important, get input from the vendor as to the resources required by the organization to make the software implementation a success. Therefore, to get the pin point details related to consideration or selection of ERP vendors, we have made broad quantitative and qualitative analysis to compare major ERP software vendors, over a period span of 2005 to 2013.

4.2 COMPARATIVE ANALYSIS OF ERP VENDORS [YEAR 2005-2008]

The survey conducted by online polling with the help of Panorama Consulting Group shows the analysis of information collected from December 2005 to November 2008. The 670 participants represent global organizations in the US, Europe, Australia and Asia that have implemented ERP within the last three years. Participants were asked to provide quantitative and qualitative responses to questions about their experiences with Tier I (SAP, Oracle, Microsoft, etc.) and Tier II (Baan, Epicor, Exact, IFS, Infor, Lawson, Netsuite, Sage, etc.) ERP implementation [152].

The report shows that majority of companies (77 percent) adopted Tier I ERP software in which people *refer* SAP: 35 percent, Oracle: 28 percent, Microsoft: 14 percent and Tier II: 23 percent. Next, Tier I and Tier II ERP implementations take similar times (average: 19.8 months) to implement. It takes SAP: 20 months, Oracle: 18.6 months, Microsoft: 18 months, Tier II: 17.8 months time to fully implement ERP solution. The average cost of implementing Tier I SAP and Oracle ERP software is significantly greater than the *average cost of implementing* Tier I Microsoft or Tier II ERP software. The total cost of ERP implementation SAP: \$16.8 million, Oracle: \$12.6 million, Microsoft: \$2.6 million,

Tier II: \$3.5 million while total average: \$8.5 million. Companies report the most satisfaction with Tier I SAP and Tier II ERP software (Total Average: 67 percent). *The satisfaction level of executive team with its ERP solution* is overall with SAP: 73 percent, Oracle: 62 percent, Microsoft: 69 percent and Tier II: 70 percent. While *Business Risk Factor* for SAP: 50 %, Oracle: 56.9 %, Microsoft: 57.7 percent, Tier II: 61.8% and the total average is 54%. Business risk factor was calculated by responses to the statement of company experiencing operational stoppages or disruptions immediately following go-live.

Further we explore ERP implementation results of SMEs compared to their larger counterparts. In this study, we consider SMEs to the organizations with less than 500 employees and less than \$500 million (USD) in annual revenue. The study reveals market shares comparable to findings by Gartner, with 35% for SAP, 28% for Oracle, 14% for Microsoft and 23% for Tier II vendors. The market shares of ERP software vendors differ between SMEs and large organizations. Microsoft has only a 6% share of large organizations, but a 22% share of SMBs. The market share of Tier II vendors is fairly comparable in both SMEs and large organizations 17% of large organizations compared to 24% of SMEs. Juxtaposition, till date, SAP has the largest share (43%) in the SME market, next by Oracle. For LEs, SAP along with Oracle retains over 75% of the market share. Many companies such as Panorama Consulting Group offer independent ERP software selection and implementation expertise to SMBs and large organizations which can help reduce implementation risk, cost, and duration as mentioned in Table 3.

Factors	SMEs	Large Organizations
Duration (Months)	18.8	25.2
Cost of Implementation	\$3,073,232	\$24,069,582
Cost / Revenue	10.5%	4.9%
Under budget / Within 5%	40.5%	35.9%
Over Budget by 5%~100%	59.5%	64.1%
# of Total FTEs (Full Time Equivalent of an employee)	14	74
Customization Level	Low	High

Table 3. Summary Results [Source: 152]

4.3 COMPARATIVE ANALYSIS OF ERP VENDORS [YEAR 2009]

In 2009, midsized companies are well served, as are their smaller and larger counterparts. The comparison made by TEC's online evaluation system between Tier I Big ERP like SAP ERP, Oracle E-Business Suite and Oracle JD Edwards Software and Tier 2 applications, such as Epicor ERP, IFS Applications, Infor SyteLine, Lawson M3, Microsoft Dynamics NAV, Microsoft Dynamics GP, Pronto ERP, EQAD, IQMS, Syspro and Jeeves is features and functions-based. It does not cover the technology area. As new ERP suppliers (with new functionalities) coming into the market, to have a more accurate result, they excluded Product Technology criteria from the comparison and assigned equal priorities to all remaining functionality criteria [141].

The overall rating of tier 1 ERP for discrete manufacturing is expectedly higher than the overall rating of tier 2 products [Figure 5]. The main functional differentiator between tier 1 and tier 2 vendors can be found when analyzing advanced manufacturing such as engineer to order (ETO) and process management, but also industry verticals with very complex activities (oil and gas, mining, electronics, etc.) [149].

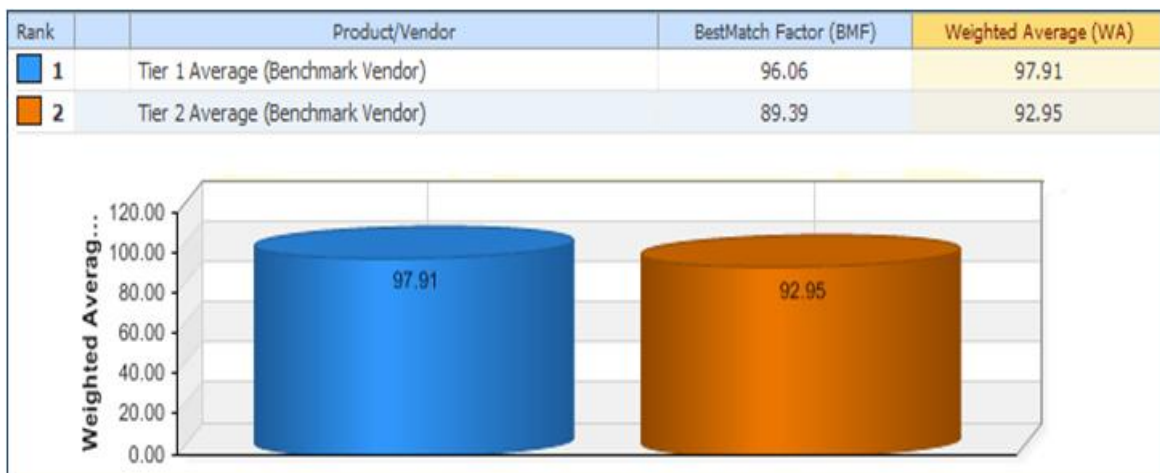


Figure 5. Tier 1 vs. Tier 2 Overall Rating Comparison [Source: 136]

The biggest differentiator between the two groups of products is in the human resource management area. Besides enterprise asset management (EAM) or product lifecycle management (PLM), is one of the areas where Big ERP vendors either acquired and incorporated software solutions, or developed their own add-ons, in order to address the

complex needs of large multi-national corporations [149]. Tier 2 started working with APIs to integrate with existing PLM, EAM, and HR unit or to work with third party tools.

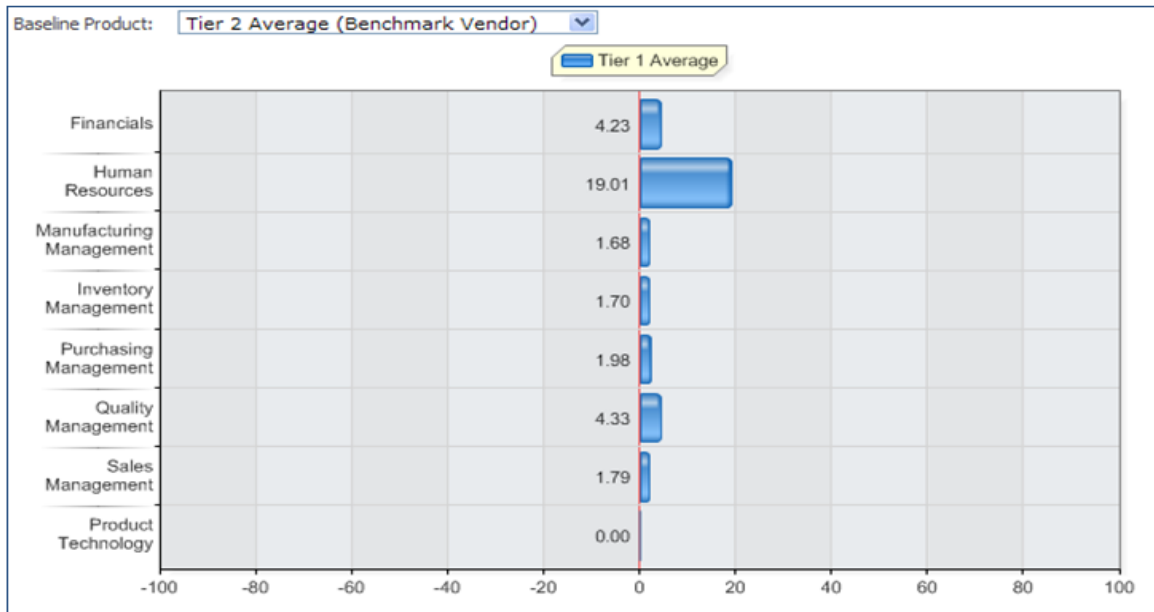


Figure 6. Tier 1 vs. Tier 2 ERP comparison by modules [Source: 136]

The differences in Manufacturing Management, Inventory Management, Sales Management, and Procurement Management areas are minimal and are within two percent of one another [136]. As a strong contender, the tier 2 has emerged on the world business scene, in comparison to famous big ERP products.

4.4 COMPARATIVE ANALYSIS OF ERP VENDORS [YEAR 2010]

Panorama Consulting Group, an independent and vendor-neutral ERP consulting firm, developed the 2010 ERP Vendor Analysis Report based on survey results from 1,600 organizations that have selected or implemented ERP within the last four years. This report analyzes project benefits and drawbacks and summarizes implementation approach and satisfaction indicators segmented by major Tier I, Tier II and Tier III vendor [143].

Tier I ERP Packages take *longest time* in implementation. The average actual duration of Tier I implementations was 13.2 months, which is approximately the same as Tier III implementations. At 11.1 months, Tier II packages had the shortest duration times.

Next the *difference between budgeted costs and actual costs* is a major issue for most companies implementing ERP software packages. Compared with Tier I and Tier III software packages, Tier II clients have a better chance of limiting ERP spending and coming in under or on budget. Over 50% of Tier II and Tier III clients had actual costs that exceeded budget. Panorama study shows that most companies that completed ERP implementations have a *payback period* (i.e., the length of time taken to recover the project investment) of two to three years. Tier I software packages were found to have the longest payback period (3 years), while Tier II payback averaged 2.2 years, and Tier III just 1.7 years.

No software package can meet 100% of a business specific requirement. 25% of companies choose to heavily customize or completely customize their ERP software; the majority of companies tend to do at least some *customization* during implementation. Nearly half of the companies surveyed (47.8%) chose mostly vanilla customizations with at least some customization to the software. Only 28.3% implemented with no customization at all. The leading three Tier I vendors have fairly similar customization rates. These three vendors have small percentages of complete customization and higher percentages of mostly vanilla implementations. SMEs that chose Tier II or Tier III software also required some customization to fit their business processes.

Overall, most companies *realized benefits* fall below 50% of what they expected to achieve. Notably, 55% of companies realized 30% or less of expected business benefits. These failures are especially evident with Tier I and Tier III clients. Nearly 70% of Tier I clients and 72% of Tier III clients fail to realize at least 50% of business benefits. Figure 5 shows that once companies realize 20% of business benefits, the marginal utility of realized benefits begin to decrease. This means the chance of getting higher realized benefits becomes smaller. The red line shows actual realized business benefits and the blue line shows expected realized benefits. The expected chance of failure to deliver 50% of business benefits is 61.1%, which provides for only a 38.9% probability of realizing over 50% of business benefits.

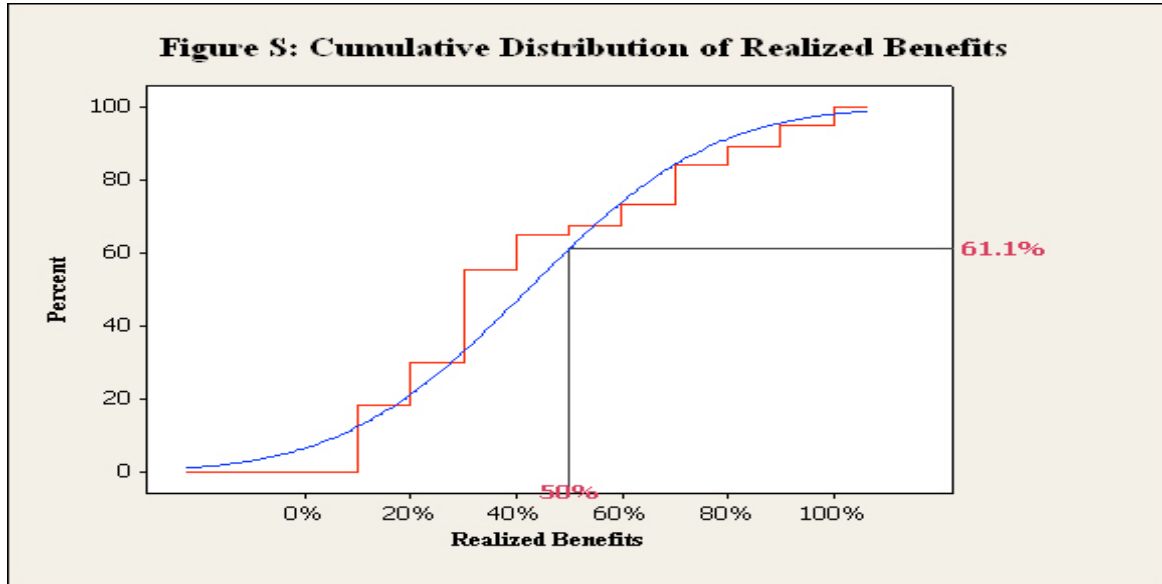


Figure 7. Cumulative Distribution of Realized Benefits [Source: 143]

The three *risks* identified in the survey responses: *over-budget, over-time, and failure to deliver* 50% of business benefits. Most implementations go over budget (51%) and fail to realize at least 50% expected business benefits (62%). In addition, a large proportion (36%) takes longer than expected to complete. Based on the probability analysis of the entire sample, there is a nearly three out of four chance (72.4%) that at least one negative result will occur and a nearly one in three chance (31%) that two or more negative results occur in any given implementation.

4.5 COMPARATIVE ANALYSIS OF ERP VENDORS [YEAR 2011]

Selecting between SAP, Oracle and Microsoft is not always easy. Depending on a company's business circumstances and IT strategies, each solution has distinct strengths, weaknesses, and tradeoffs [140]. Having explored all opportunities within the large enterprises for enterprise resource planning (ERP) solutions, in 2011 international players are now chalking plans to capture the small and medium enterprises (SMEs) segment. Attempting to strengthen its hold in the SME segment, Baan has even identified a domain for SMEs, while JD Edwards is busy experimenting to arrive at reasonably priced ERP solutions for this segment. Navision, on the other hand, boasts of its focus on SMEs since

the beginning. To meet the explicit needs of various companies, it provides a horizontal ERP product for all vertical sectors and works through solutions centres. SAP India too is eyeing the SME segment and is working on solutions to cater to the specific needs of the SMEs [150].

According to National Association of Software Services Companies (NASSCOM), “ERP penetration is still limited to only top 200 companies of the total of over 6 lakh companies. There is immense opportunity for the ERP players and they must concentrate on mid-sized and small-sized companies.” Following this trend, Baan India has consciously taken a decision to target the SMEs. For JD Edwards, SMBs put in about 50% of revenues from ERP implementation. They further concentrate more on SMB’s benefit. The Indian companies deploy ERP solutions that are Web-centered architectures and componentized customer and supplier facing applications, according to experts. The network infrastructure used is WAN to connect multiple locations of the company and centralise the information flow. As companies demand ERP solutions that will make their business more and more customer centric instead of product centric, the ERP players need to constantly upgrade their technology to suit the customers’ needs.

4.6 COMPARATIVE ANALYSIS OF ERP VENDORS [YEAR 2012]

The data in Panorama’s 2012 ERP Report presents a bit of a mixed bag of results. It is extremely rewarding to see that more than 81% of respondents are satisfied with their ERP software along with improved budget and schedule overruns in comparison of previous year records [144]. This shows that organizations are taking more steps to meet implementation goals quicker and are working to stop the absurd cost and duration overages we have seen in past years. Based on the data and market situation, ERP vendors based on Business Size are;

1) Small Business

Microsoft Dynamics is considered as top ERP for SMEs because the features are ideally suited to the requirements of small organizations. It has more than 83,000 ERP customers. The family of Microsoft ERP products are as follows:

a) Microsoft Dynamics AX (Axapta)

- b) Microsoft Dynamics GP (Great Plains)
- c) Microsoft Dynamics NAV (Navision)
- d) Microsoft Dynamics SL (Solomn)

Both Dynamic AX and NAV offer strong distribution and manufacturing while dynamics GP remains a favourite channel and offers the strongest financial options among the MS product suite.

2) Middle Market

The following two products as top ERP in this segment:

a) EPICOR

Epicor has 20,000 customers in more than 150 countries. It offers solid ERP functionality together with a number of impressive industry solutions for Professional Service Automation (PSA), hospitality management, pharma, manufacturing, distribution and non profit.

b) Infor

As 3rd largest ERP manufacturer, Infor has more than 70,000 customers behind only Oracle and SAP. INFOR has different ERP software systems and particularly strong distribution, lean manufacturing, complex manufacturing process solution and supply chain management (SCM).

3) Enterprise ERP Leader

Obviously SAP and Oracle are the most top ERP in this segment as #1 and #2 ERP market share leader. Today SAP has released ERP solutions for SMEs named as SAP Business One and they claimed that they have helped more than 75,000 SMEs [10].

4.7 COMPARATIVE ANALYSIS OF ERP VENDORS [YEAR 2013]

Panorama Consulting Solutions prepared the 2013 ERP Report after conducting polling on Panorama's website (Panorama-Consulting.com), during a recent four-month period (September 2012 to January 2013). Total 172 respondents completed the surveys related to investigate ERP software selection, implementation and satisfaction trends across industries, company sizes and geographic locations. Again SAP (with 34%) was the top in vendor list, sequenced by Oracle (26%), Microsoft Dynamics (19%), Epicor (7%) and

Infor (5%). In spite of tough competition set by Tier I solutions SAP, Oracle & Microsoft Dynamics with massive resources, Tier II vendors Epicor and Infor are making their base in the ERP market. The latest data shows that to amplify potential gains, 26% of companies including SMEs using cloud and SaaS solution, compared to last year data of 16%. Cloud and SaaS market share continues to increase, but on-premise ERP systems still dominate [139].

4.8 CONCLUSION & DISCUSSIONS

Conclusively, over the past nine years, more users may have realized the actual degree of influence that effective change management has on the success of ERP projects. Based on the ERP experience, change management prove to be vital in increasing employee buy-in and operational productivity[146]. Like lean six sigma methodology, well-designed processes and workflows proved instrumental to the success of ERP projects. As lean ERP, standardized business processes and precisely defined organizational roles, contribute to the success of a project by keeping organizations focused on how an ERP system will achieve specific business goals.

Over the past decade, the SMB market has become one of the highest-growth areas of the ERP industry. As Large ERP vendors are moving downstream to the SMB business market by developing lower-cost solutions with more appropriate functionality for smaller businesses. There are plenty of Tier II ERP software vendors that SMBs can choose from, such as Epicor, Infor, Sage and others. These Tier II vendors provide more options to SMBs beyond traditional Tier I providers [142].The SME sector has experienced more growth over the last several years than larger, more mature organizations, which has strained their legacy systems. This high level of growth, combined with a misalignment between their current systems and their business processes, make SMEs good candidates for ERP system replacements.