ERP - AN EVALUATION WITH REFERENCE TO SOFTWARE AND CONSULTING COMPANIES IN CHENNAI

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ABSTRACT

Enterprise resource planning systems or enterprise systems are software systems for business management, encompassing modules supporting functional areas such as planning, manufacturing, sales, marketing, distribution, accounting, financial, human resource management, project management, inventory management, service and maintenance, transportation and e-business. The architecture of the software facilitates transparent integration of modules, providing flow of information between all functions within the enterprise in a consistently visible manner. This paper is with objectives of understanding the concept, advantages and disadvantages of ERP, analyzing the todays position of ERP Market and analyzing the effects of ERP Implementation. The today's position of ERP market was evaluated based the top players in the ERP market and small survey was conducted on the companies which have implemented ERP in the last one year. The contents of this paper will bring the clear cut view about the ERP Implementation.

Key words: Enterprise Resource Planning, Enterprise Systems, ERP,Integrated Approach, SAP.

INTRODUCTION:

Enterprise Resource Planning, A software system designed to support and make the business processes more efficient. This may include manufacturing, distribution, personnel, project management, payroll, and financials.[1] The ERP, Enterprise Resource Planning, market is relatively new and has grown very quickly lately. The three main reasons for the growth have been globalisation, Year 2000, and the need for better information integration. There is also a trend to replace older customised systems with standard applications such as an ERP system.

Enterprise systems typically require millions of dollars in resources, years of focused commitment, and a large contingent of highly skilled professionals to ensure successful implementations. Most organizations struggle with ES implementation.[2]

These complex, expensive, powerful, proprietary systems are off the-shelf solutions requiring consultants to tailor and implement them based on the company's requirements. In many cases they force companies to reengineer their business processes to accommodate the logic of the software modules for streamlining data flow throughout the organization. It is a neverending process of reengineering and development bringing new products and solutions to the ERP market. ERP vendors and customers have recognized the need for packages that follow open architecture, provide interchangeable modules and allow easy customization and user interfacing.
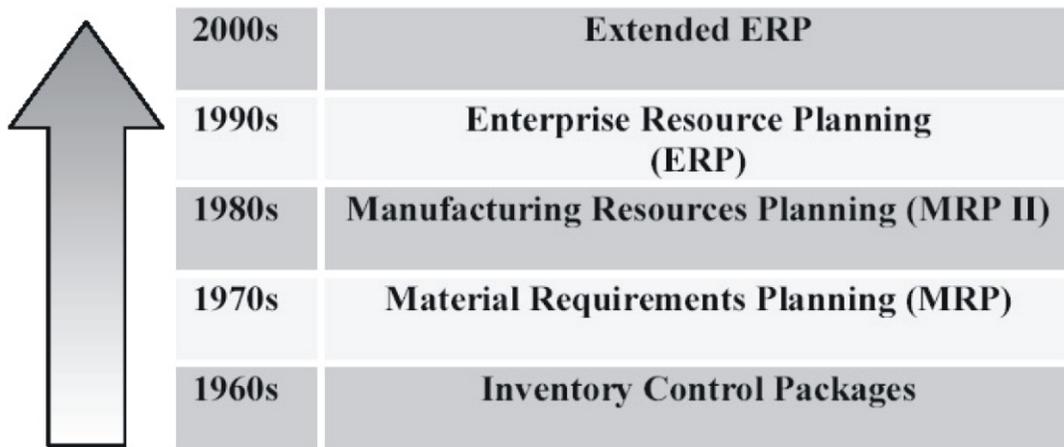
OBJECTIVES :

This paper is designed to clarify the following objectives:
- To understand the concept, advantages and disadvantages of ERP
- To analyze the todays position of ERP Market
- To analyze the effects of ERP Implementation

CONCEPT OF ERP:

Enterprise resource planning systems or enterprise systems are software systems for business management, encompassing modules supporting functional areas such as planning, manufacturing, sales, marketing, distribution, accounting, financial, human resource management, project management, inventory management, service and maintenance, transportation and e-business. The architecture of the software facilitates transparent integration of modules, providing flow of information between all functions within the enterprise in a consistently visible manner. Corporate computing with ERPs allows companies to implement a single integrated system by replacing or reengineering their mostly incompatible legacy information systems. American Production and Inventory Control Society has defined ERP systems as "a method for the effective planning and controlling of all the resources needed to take, make, ship and account for customer orders in a manufacturing, distribution or service company."[3]

The Evolution of ERP system is depicted in the following Figure-1 :[4]

2000s	**Extended ERP**
1990s	**Enterprise Resource Planning (ERP)**
1980s	**Manufacturing Resources Planning (MRP II)**
1970s	**Material Requirements Planning (MRP)**
1960s	**Inventory Control Packages**

ADVANTAGES AND DISADVANTAGES OF OF ERP SYSTEM:[5]

Advantages:

1. The problem of synchronizing complex systems like human resource, finance, sales and marketing are handled and eliminated by these ERP systems.
2. Cross functional services which need communication between different business units are permitted by this system.
3. A top down view of the organization can be easily figured out.
4. A considerable amount of risk in losing important data is eliminated.
5. Production time and delivery time can be reduced to a high level.

Disadvantages:

1. The customizations options available in the ERP software are limited.
2. ERP systems are expensive.
3. After implementation, migration of the system might become expensive.
4. Sensitive information regarding a company can't be shared efficiently with ERP.

TODAY'S POSITION OF ERP MARKET:[6]

It is almost impossible to define the size of the ERP market. All analysts have their own definition and therefore their own version concerning dominating companies, market shares, present size of the market and future market growth.

The today's position of ERP market was evaluated based the top players in the ERP market and small survey was conducted on the companies which have implemented ERP in the last one year. The area of survey was restricted to chennai. Totally 50 companies were taken as sample size. The method of Judgment sampling was adopted for selecting the sample.

Vendors of ERP Market:

The following table summarizes the 2011 ERP vendors and their category:[6]

Sample Vendors		
Tier I	Tier II	Tier III
SAP Oracle Oracle JD Edwards Oracle Peopl Soft Microsoft Dynamics	Epicor Sage Infor IFS QAD Lawson Ross	ABAS Activant Solution Incorporations Baan Bowen and Groves Compiere NetSuite Visibility Blue cherry Hansa world Intuitive and Syspro

Position Based on Market Share:

The strong branding, overall market share and variety of products offered by SAP, Oracle and Microsoft make these companies undoubtedly the top three ERP vendors. SAP ranks highest by capturing 24-percent of total market share, followed by Oracle with 18-percent of total market share and Microsoft with 11- percent. Tier II solutions represent 11-percent of the market and Tier III and others represent 36-percent of the market. It is significant to note that these statistics reflect the increase in Tier II and Tier III vendor participation in the ERP arena over the past several years, though their combined totals still do not equal the totals of SAP and Oracle combined.

Figure 2-Vendor Market Share in 2010
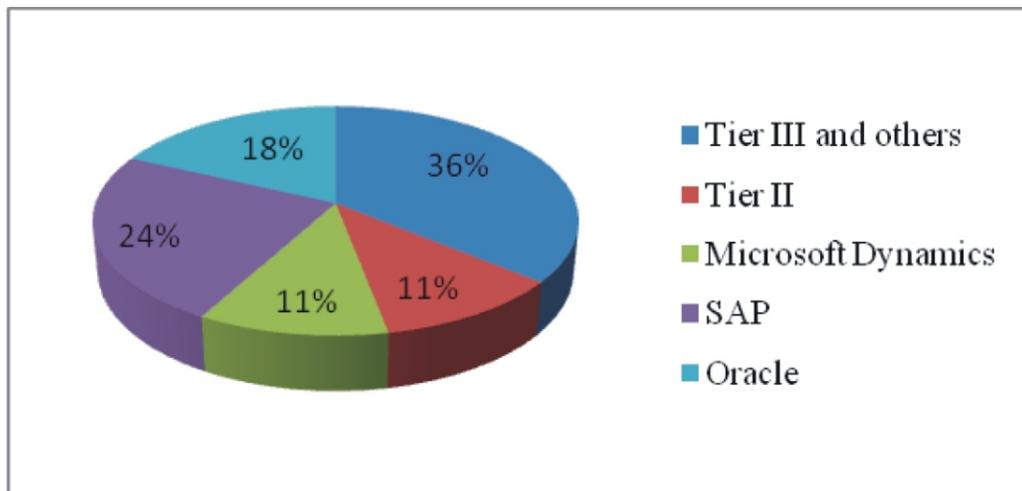
Position Based on client Revenue:

Based on client revenue, SAP continues to attain the biggest share of the total market, regardless of customer size. Microsoft has a relatively small share of market, compared to other Tier I vendors. Oracle continues to be SAP's strongest rival and competes head-to-head with SAP. . Tier II and Tier III vendors continue to expand their reach into all market segments.

Position Based on vendor Sales by Industry:

SAP and Microsoft Dynamics are virtually matched in manufacturing and distribution (28.1-percent and 28.3-percent, respectively). All three vendors have similar percentages of clients within transportation, communications, electric, gas and sanitary services. Microsoft Dynamics has the highest percentage of clients within the retail (10.5-percent) and services (14.9-percent) industries while Oracle has the lowest (6.2-percent and 11.9-percent, respectively).

Position Based on Pay back Period:

The average payback period of ERP investments varies by tier, but the majority of implementations "pay back" in less than three years:

- Tier I payback periods average less than three years 55-percent of the time
- Tier II payback periods are less than three years 66-percent of the time
- Tier III vendors typically obtain a payback period of less than three years 76-percent of the time

With Tier I implementations, the investment is greater and the stakes are higher - both of which may indicate that the companies who choose Tier I are better able (or more prone) to track their business benefits. The Tier II results reflect both the lower investment and the lower total cost of ownership of these solutions. The quick payback period of Tier III vendors may be due to the fact that many companies choose these systems as their first ERP systems. The benefit realization can be understandably substantial over manual systems and also reflects the lower investment and total cost of ownership of Tier III solutions.

Position Based on Implementation duration:

The analysis of proje ct durations below indicates that the average implementation, regardless of tier, takes longer than planned:

Average Duration	Overall	Tier I	Tier II	Tier III
Months Planned	11.2	12.9	9.25	9.3
Actual Duration	14.6	15.7	15	12
Percentage Overrun	30.4%	21.7%	62.2%	29.0%

Tier I solutions are generally more comprehensive and flexible, which can result in longer implementations. Tier II vendors often use third-party modules to supplement their own basic product, and integration of these modules can extend the project past the anticipated duration. Alternatively, Tier III vendors typically are highly specialized and require fewer changes, which at least partially explain why those implementations take the least amount of time (12 months on average).

EFFECTS FROM IMPLEMENTING AN ERP SYSTEM:

From the research, Peder Brandt et al. (1998) have listed these effects:[7]

Positive effects:

- **Standardised implementations:** It is much easier to buy an existing system than developing your own system. There have been a lot of complaints over the years that ERP systems take too long to implement, especially the implementation time of SAP R/3. By now the vendors have developed methods and other means to shorten the time of the implementation, Accelerated SAP, for example.

- **Cheap development:** The ERP vendors put in between 5-15 percent of their revenues in their Research & Development department. To develop your own systems that are equally good is very costly.

- **Safe cost estimation:** To invest in an existing system makes it easier to estimate the total cost of the system and implementation. If you develop your own system it is difficult to know how much you finally will spend on the system.

- "Know-how" built-in the system:
  The system has been implemented and tested in other companies and therefore you know it is in working order. When you develop your own system, it is hard to anticipate the problems that you may run into and how these problems will affect the functionality.

- **Flexible systems:** The systems consist of modules, which make adaptations at a later time easier.

Negative effects:

- **External vendor without company knowledge:** To acquire an ERP system means buying a system that is not specifically adapted to the company. But systems adapted to specific industries are coming and will be improved in the years ahead.

- **Increased need of external competence:** Since the market has grown so quickly, there is a lack of skilled people. It is difficult to keep the internal competence and you therefore need much help from consulting firms.

- **New routines for the staf:** An ERP system is hard to adapt completely to the organisation. This means new routines for the staff, which make the work more difficult in a period of transition.

- **Freezes system development to the vendor:** The company follows the vendor's development with little possibility to influence. The programs can be hard to support for the company itself. The client will also have to purchase future releases of the system.

- **Underestimates the importance of the pre-study:** The company may after the implementations have a system that it cannot handle.

Benefits Realized by clients on ERP Implementation:

There are different types of benefits that can be realized as a result of an ERP implementation project. Some of the common benefits are: improved interaction with customers and suppliers; reduced labor costs; and improved lead times.

According to survey respondents, the two benefits realized consistently across organizations are the availability of information, faster response times and increased interaction across the organization as a result of streamlining processes. Overall, 94-percent of survey responders realized some benefits. Fifty percent realized greater than 50-percent of benefits.

Figure-3 Benefits realization
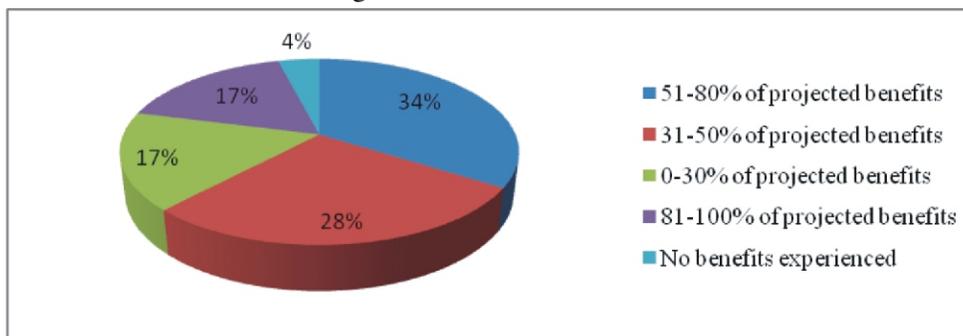
Costs Associated with ERP Projects

There are many considerations that factor into total cost of ownership. Many companies underestimate these costs and ultimately go over budget as a result. Understanding all of the items that make up total cost of ownership will help guide organizations into making better financial projections. The basic costs that factor into ERP implementations such as license and maintenance costs, technical implementation costs, upgrade costs, travel costs and hardware costs. However, there are more thatneed to be considered when setting up a budget. Other-cost related items include customization and integration costs, organizational change costs, business process blueprinting costs, training costs and project governance costs. If these costs are not considered, it can result in unexpected budget increases, extended timelines and angry management.

Figure - 4 Implementation Cost
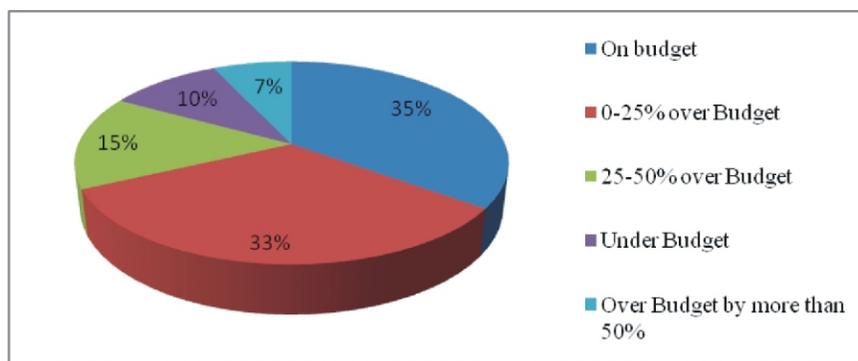
Top reasons cited for budget overruns are that the initial project scope was expanded and unanticipated technical or organizational change management issues resulted in additional costs.

Recouped Costs:

organizations often underestimate the time it will take to realize benefits and recoup project costs Companies cannot identify where, or when, they will recoup costs if they don't identify them at the beginning of the project. It becomes difficult to manage and report.

This can also be the result of unrealistic project expectations in regards to budget and timeline. If proper expectations and planning do not happen at project onset, it can lead to failed ERP implementations and zero costs recouped.

However, 71-percent of companies have recouped their costs. On average, these companies recouped their costs between one to years after go-live. Nineteen-percent of companies recouped costs three years after go-live. These numbers are reasonable and what is expected with a large ERP implementation.

Figure -5 -recouped cost
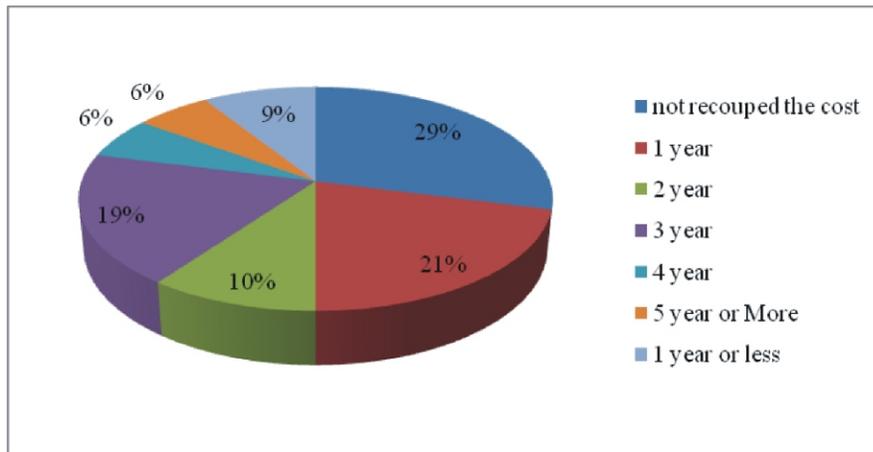
Project Timeline:

It's difficult to know how long an ERP implementation will take; however, based on indepth research, we are able to predict average project timelines based on company size and ERP vendor. There are many factors that can impact project timelines such as a change in project scope, unplanned organizational change management issues, proper training issues and resource constraints. However, all of the items listed are issues that can be addressed during implementation planning to reduce the risks of a project running over its expected timeline. On average, ERP implementation projects take about 16 months to complete.

Based on recent survey data, 38-percent of projects run on schedule. Fifty four percent of projects run over schedule, and 23-percent run over schedule by 25- percent. Companies are doing more planning and identifying some of the risks earlier in the planning phase to mitigate some of the disruptions and consequently result in additional costs.

Figure -6 Project Timeline
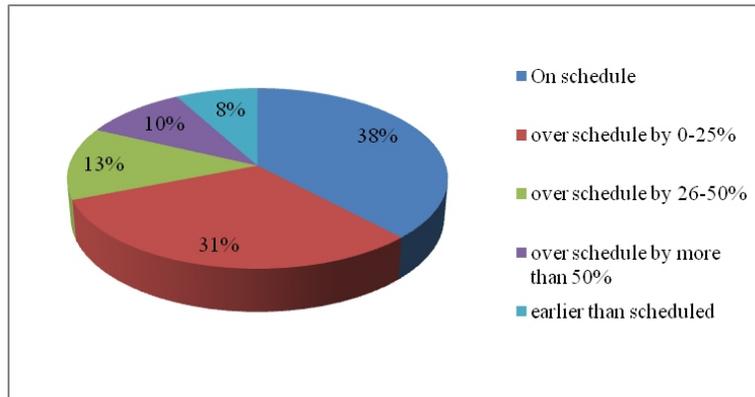
CONCLUSION:

When evaluating the background and findings of the current research and also the previous researches, In today's challenging economic environment, companies are faced with having to cut costs and improve efficiency within their organizations. Enterprise resource planning (ERP) has become a solution many companies use to integrate internal and external management information across organizations. The purpose is to simplify and expedite information flow to all areas within a business to improve efficiencies. There are different opinions about the future ERP market. We believe that the market will continue to grow strongly in future, but probably in a different way due to new market drivers.

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