



# MEASUREMENT OF THE USERS' SATISFACTION OF THE ERP PACKAGE IN TEXTILE INDUSTRY

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## ABSTRACT

Information technology is revolutionizing the way in which we live and work. With the ever-changing demands of marketplace and requirement of industries, ERP is the software solution that addresses these changing enterprise needs by taking the process view of an organization to meet the organizational goals tightly integrating all functions of the enterprise. The present study tries to measure the users' satisfaction of the ERP package in textile industry. The result of the study indicates that among the various ERP packages TIM provides the maximum users satisfaction which is a textile specific package, the decision making process at tactical level of management is simplified, and the young and enthusiastic users of age group 25-40 prefer to work on the customized ERP package that provides standardized and simplified business operations.

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## Introduction

The success of an organization rests in resolving the conflict between the various business functions and making them do what is good for the organization as a whole. For this, information is critical. With the advancement in IT information sharing is possible. Enterprise Resource Planning (ERP) is a way to integrate the data and processes of an organization into one single system. ERP systems cover a wide range of functions and integrate into one unified database. For instance, functions such as Human Resources, Supply Chain Management, Customer Relations Management, Financials, Manufacturing functions and Warehouse Management functions. Installing an ERP system has many advantages-both direct and indirect. The following are some advantages of an ERP system.

### Reduces lead time

It plays a significant role in purchasing and inventory control. All inventory systems have safety mechanisms like safety stock; re-order level and so on built into them, to avoid the situation where the material is out of stock. The consequences of the non availability of an item required for production can result in missing the delivery schedules, losing the customer goodwill due to delayed delivery or even losing the customer to the competition. One can avoid this situation by requesting for the material well in advance rather than when they are actually needed, or by keeping a large buffer stock or by maintaining a very high re-order level. But all this means that large the inventories must be kept, which blocks the money. The ERP systems help in automating this task and make the inventory management more efficient and effective. Also, since the ERP system is integrated and the material management module is integrated with other modules like sales, marketing, purchasing, manufacturing and production planning, the demand for a particular item can be known as early as an order is received. Since most suppliers are also connected to the organization's system as soon as a purchase order or requisition is issued, the supplier's system is update with system with that information, so the supplier knows what items are to be supplied and when. Since the activities like preparation of contracts, issuing of purchase order and payments happen through the system electronically, the time saved phenomenal. ERP system by virtue of their integrated nature and by the use of latest technologies like Electronic Funds Transfer (EFT),

Electronic Data Interchange (EDI), reduce the lead-time and make it possible for the organization to have the item at the time they are needed (just-in-time inventory system).

## **On time shipment**

Companies must be able to deliver customer-specific products (made-to-order) with the lead-time of standard, off-the-shelf products. The companies must be able to change the mode of production from make-to-stock to made-to-order, yet retain the cost and time advantages of off-the-shelf products. ERP system provide the freedom to change the manufacture and planning methods as needs change, without modifying or reconfiguring the work place or plant layout. ERP system does not limit to a single manufacturing method, with unlimited flexibility to choose the best method-or combination of methods-for each product at each stage throughout its life cycle. Most of the system allows smooth integration with popular CAD packages to simplify the exchange of information about drawing, items, BOMs and routing.

## **Reduces the cycle time**

In the make-to-order operation the cycle time and cost of production are high as the manufacturer starts making the product/designing the product only after receiving the order. On the other end, in the make-to-stock approach, the e products are kept in the finished goods inventory before the order is placed. In both cases the ERP system can reduce the cycle time by 30-50 percent using the automated procedures and up-to-date centralized database.

## **Improves resource utilization**

As manufacturing processes become more sophisticated and the philosophies of elimination of waste and constraint management have achieved broader acceptance, manufacturers place increased emphasis upon planning and controlling capacity. ERP system offer, both rough-cut and detailed capacity planning. The system loads each resource with production requirement for master production scheduling, material requirement planning and shop floor control this is evaluated and loaded against capacity definitions for

each resource, and all capacity requirements are pegged back to the orders comprising the load. The ERP systems simulation capabilities help the capacity and resource planned to simulate the various capacity and resource utilization scenarios and choose the best option.

## **Better customer satisfaction**

ERP systems have proved that they can produce goods at the flexibility of make-to-order approach without loosing the cost and time benefits of made-to-order operations. The customer will get individual attention and the features that he/she wants, without spending more money or waiting for long periods. With the introduction of the web-enable ERP systems, the customers can place the order, track the status of the order and make the payment sitting at home. The customer could get technical support by either accessing the company's technical support knowledge base or by calling the technical support. All this is possible because of the use of the latest developments in information technology by the ERP systems and, this will go a long way in improving the customer satisfaction.

## **Improves supplier performance**

The quality of the raw material or components and the capability of the vendor to deliver them on time, are of critical importance for the success of any organization. An organization needs to choose its suppliers or vendors very carefully and monitor their activities closely, so that problems can be corrected before it can disrupt the functioning of the company. The ERP systems provide vendor management and procurement support tools designed to coordinate all aspects of the procurement process. They support the organization to effectively negotiate, monitor and control procurement costs and schedules while assuring superior product quality. Supplier quotation and contracts can be created to support the procurement of all products and services required by the enterprise. The ERP systems search for the best-fit supplier contract and the information regarding an order is transmitted to the supplier's systems almost instantaneously. Using the system, organization can establish and manage highly effective supplier certification programs which ensure maximum conformance of purchased material to specification, while maintaining lead-times and costs.

## **Increases flexibility**

Competition is forcing the companies to respond rapidly to customers' wishes and changes in the market. They need to design/redesign products quickly and efficiently. ERP systems have use a rule based product configuration system, configure-to-order (CTO) manufacturers are able to simplify the order entry process and retain engineer-to-order (ETO) flexibility, without maintaining bills of material for every possible combination of product operations. ERP systems help the companies to remain flexible by making the company information available across the departmental barriers and by automating most of the process and procedures, thus enabling the company to react quickly to changing market conditions.

## **Reduces quality costs**

Quality is defined in many different ways-excellence, conformance to specification, fitness for use, value for the price and so on. The Quality Management System in ERP packages support optimal product design, process engineering and quality assurance data by the financial departments within the manufacturing enterprise, thereby facilitating definition of repeatable process, root cause analysis, and the continuous improvement of manufacturing methods. Specification Control Systems in ERP packages offer a state-of-the-art approach for documenting specifications and enable an organization to standardize and simplify its quality assurance and control function. Maintenance of standard specifications, detailed sampling instructions and testing procedures are performed on-line. Material Inspection Systems offer a wide range of capabilities for process supervision and control.

## **Improves information accuracy and decision-making capability**

To survive, thrive and beat the one has to manage the future. Managing the future means managing the information at the right time. Organizations have to make Information Technology (IT) an ally, harness its full potential and use it in the best possible way. ERP system-integration and automation treats the organization as a single entity and caters to the information needs of the whole organization. improving the accuracy of information and thus help in better decision-making.

## Disadvantages of ERP

The advantages usually outweigh disadvantages; however most of organizations implementing ERP system experience some obstacles like customization, need to reengineer business processes, cost prohibitive, technical support, rigid. Many obstacles can be prevented if adequate investment is made and adequate training is involved, however, success does depend on skills and the experience of the workforce to quickly adapt to the new system.

## ERP packages

The ERP market is a very competitive and fast growing. There are many ERP packages available in the market like SAP, Oracle, PeopleSoft, QAD, SSA, JD Edwards, TIM, Baan, Intentia, SYSPRO ERP, Lawson S/W, Infor, Ross system, Kewill, Industrial and Financial system(IFS) etc.

## An Overview of Textile Industries

The Textile Industry occupies a unique place in our country. In year 2005, the contribution of textile industries in industrial production was 14 percent of the total industrial production, in export it was 30 percent of the total exports and also it was the second largest employment generator after agriculture. It provides one of the most basic needs of people and holds importance in maintaining sustained growth for improving quality of life. It has a unique position as a self-reliant industry, from the production of raw materials to the delivery of finished products, with substantial value-addition at each stage of processing; it is a major contributor to the country's economy. The textile industry in our country is one of the few industries, which has the potential to emerge as a true global player.

The industry however, slacks in use of manpower, energy, fuel, textile material, and other processing materials and it needs concert strategy and time-bound action plan to convert its core competence in availability of raw materials, skilled manpower, managerial competence and entrepreneurial skill to a competitive strength as a producer and supplier of top quality textiles at competitive prices. The comprehensive enterprise resource planning (ERP) system has allowed the companies to regain active control of their whole administration and operations to increase efficiency and profitability.

It enabled new levels of business process and technology integration while laying the foundation for incremental evolution of the solution. The ERP is needed to heighten quality, to make profit and to survive in the global market because this allows to think on the results and to make the beneficial correction.

## Rationale

Management of the manufacturing resources plays a vital role in any textile industry. ERP helps in the optimal uses of manufacturing resources. It reduces the wastage of the raw materials and higher quality of product can be obtained. Controlling of the different textile mills in the different location can be made easy by this system. It vanquishes the old standalone computer system in Finance, HR, Manufacturing and Warehouse, and replaces them with a single unified software program divided into software modules that roughly approximate the old standalone system. It helps in the planning for optimizing and scheduling of production orders. ERP package not only provides a user-friendly environment that can be tailored to the needs of companies both large and small, but also progressively expanded, both in the horizontal sense to embrace additional organizational functions. Some of the other benefits achieved are improved punctual delivery, reduced purchasing cost, reduced inventory cost, reduced wastages, improved client relationship, and reduced lead-time.

Textile companies are looking for ERP solution to fit their specific needs and ERP covers the techniques and concepts employed for the integrated management of business as a whole with objectives of effective use of management resources to improve the efficiency of the organization. The textile industries have changed tremendously in the last few years. To sustain competitive advantage, companies must re-examine and fine-tune their business processes to deliver high quality goods at very low costs. Globalization has led to increase in competition and quality awareness and therefore it has become very important for the textile industry to integrate itself with information technology to survive. ERP is an integrated system that allows information to enter at a single point in process and updates a single shared database for all functions that directly or indirectly depend on this information.

With the ever-changing demand of marketplace for superior quality cost, customer satisfaction and requirement of industries, in respond to these demands, ERP is the software solution which addresses these enterprise needs taking the process view of an organization to meet the organizational goals tightly integrating all functions of the enterprise. The present study tries to measure the users' satisfaction of the ERP package in textile industries. User Satisfaction is a subjective evaluation of the various individual, organizational, and societal consequences. And its measurement is necessary to understand how the user perceives ERP, to improve on areas that are failing to match the quality of service demanded by clients and to monitor the loyalty of the user.

## Objective

The study was conducted the following objectives:

- To find out the satisfaction of the users for ERP packages in textile sector
- To find out the areas that affect satisfaction of users
- To suggest methods to improve the user satisfaction

## Review of Literature

SAP R/3 as has approximately 39 percent of the world ERP market. In Australia there are approximately 400 companies using SAP R/3. Moreover, SAP R/3 is used in a broad range of industries and organizations such as automotive, consumer products, chemical, manufacturing, oil and gas, high-tech pharmaceutical and communications (Richardson 1997). ERP sales represent a significant proportion of total outlays by business on information technology infrastructure. It has been estimated that worldwide expenditure on ERP software was \$14.8 billion in 1998 and annual revenue of \$52 billion in 2002, which represents a 250 percent increase over the 5 years (Torsten, 1998). Most ERP related research has become product-driven ignoring the importance of the other types of knowledge that are vital for the success in an ERP project. While business and technical knowledge still can be taught at universities, realistic project and especially company-specific knowledge is often beyond the scope of an ERP (Stewart, 1999). Enterprise Systems essentially change fundamental business work processes



providing a necessity for the systems that support these processes, the design and development of their systems also to change (Watson and Schneider, 1999). According to Seethamraju (1999) the ratio between software and consulting expenses is often ranges from 1:3 to 1:5. This situation is a major challenge for industries currently integrating ERP into their process.

The main vendors in the ERP software market are SAP AG, Oracle, Baan, PeopleSoft, JD Edwards, McDonnell Information Systems, QAD, and Pivotalpoint. SAP is the largest client/server and mainframe ERP software vendor with approximately 21,000 employees, 11,000 customers, and 1.7 million users. 50 percent of the respondents in Australia decided to adopt for SAP AG ERP-system in all functional areas of business. 12.7 percent considered adopting ERP-systems and then rejected them. Major reasons for rejection were license costs (25 percent), other costs (25 percent), incompatibility with the company's processes (25 percent), and limited functionality (12 percent) (SAP, 2000). Konradin Verlagsgruppe (2002) in an annual study of ERP solutions in German industrial organizations on customer satisfaction, revealed that implementing an ERP system requires a certain commitment of a company's IT and user resources. This leads to considerable costs and are thus important criteria for selecting the right ERP system. The combination of sophisticated implementation methodologies and the nature software, enabled companies to achieve an average implementation time of 3-5 months. Flexibility provided in the newer generation of ERP systems and the use of a knowledgeable consultant over the life of an implementation project can minimize the customization required, maximize the satisfaction of the user base, and reduce the stress of a project manager facing the question of whether to customize (Jeffrey W. Noyes, 2003).

In a survey of CIOs in U.S. about the ERP vendors they were considering, 55 percent said SAP and 43 percent said Oracle. The next highest vendors were Microsoft at 17 percent and Lawson at 10 percent. Many organizations have implemented financials, order management, inventory, and procurement modules of ERM, but they are just getting around to deploying manufacturing. Manufacturing is expected to get the largest share of the ERP investment in coming years, and is second only to business intelligence/

analytics in strategic importance (AMR Research, 2006-2007). Panorama Consulting Group reported that ERP software is capable of delivering 96 percent of the functionality required by client, \$7 million of annual cost savings at full system implementation resulting in a 20 percent internal rate of return on investment. Pantaloon successfully implemented ERP system from SAP, now it plans to go ahead with IT projects such as implementation of WMS with RFID, Customer Intelligence and CRM (Kushal Shah, 2007).

## Methodology

It is an exploratory study; to find out the satisfaction of the user from ERP packages used in their textile industries and find out the areas/factors that affect satisfaction of user. Their after, methods for improving the user satisfaction have been suggested. The research is limited to the textile industries in western part of Madhya Pradesh. As the population is divided into internally heterogeneous subgroups, purposive sampling technique was used to select the companies under the subgroup of Textile industries. The representative sample consisted of 135 respondents. The sample is derived from different export oriented textile industries' employee like Pratibha Syntax Ltd., Maral Overseas Ltd., Grasim, Anant spinning mill, Nahar spinning, STI, Spentex industries Ltd, Parasrampur International, Mahima Purespun of western region covering Indore, Pithampur, Bhopal & Naghda to measure their satisfaction in different age groups, job experience, level of management and different ERP packages.

The primary data was collected using ERP readiness assessment questionnaire derived from Vinod Kumar Garg and N.K. Venkitakrishnan (1999). The survey instrument had 16 statements to be evaluated, corresponding to improve work, integration of various functional areas, easy to forecasting future, flexibility in adoption of technology and processes. The instrument was a 5 point likert scale to measure user satisfaction from the ERP package. For each statement of the instrument the respondents were asked to indicate their perception. Analysis of data was done using parametric two-sample z-test at 5 percent level of significant ( $Z_{tab} 1.96$ ) to find out the user satisfaction from the ERP packages.

## Results and Discussion

### Experience Wise:-

$H_{01}$ : There is no significant difference in the satisfaction level between the users of greater than 10 years of experience and the users of less than 10 years of experience on an ERP packages.

$$\bar{X}_1 = 59.80 \quad \bar{X}_2 = 61.93$$

$$Z = 1.79$$

The null hypothesis is accepted at 5 percent level of significance.

### ERP Packages Wise:-

$H_{02}$ : There is no significant difference in the satisfaction level between the users of TIM and users of other packages.

$$\bar{X}_1 = 61.36 \quad \bar{X}_2 = 61.2$$

$$Z = 0.48$$

The null hypothesis is accepted at 5 percent level of significance.

$H_{03}$ : There is no significant difference in the satisfaction level between the users of SAP and user of other packages.

$$\bar{X}_1 = 62.22 \quad \bar{X}_2 = 61.2$$

$$Z = 3.64$$

The null hypothesis is rejected at 5 percent level of significance. The users of SAP and the users of other ERP packages differ significantly in their satisfaction level. The users of SAP are more satisfied than the users of other ERP packages. As SAP is having higher market share and has 32 modules for any type of organization so most of the organization preferred to use it.

H<sub>04</sub>: There is no significant difference in the satisfaction level between the users of SAP and users of TIM.

$$\bar{X}_1 = 62.22 \quad \bar{X}_2 = 61.36$$

$$Z = 2.03$$

The null hypothesis is rejected at 5 percent level of significance. The users of SAP and the users of TIM differ significantly in their satisfaction level. The users of TIM are more satisfied than the users of SAP. As TIM is a textile specific ERP package and it is having same type of work practices that are used by employees of textile industries. Therefore the employees find it easy to learn and preferred to work on it.

#### Management Level Wise:-

H<sub>05</sub>: There is no significant difference in the satisfaction level between the users at tactical level of management and the users at operational level of management.

$$\bar{X}_1 = 62.48 \quad \bar{X}_2 = 61.11$$

$$Z = 2.6$$

The null hypothesis is rejected at 5 percent level of significance.

The users at tactical level of management and the users at operation level of management differ significantly in their satisfaction level. The users at tactical level of management are more satisfied than the users at operation level of management. The ERP package has helped to simplify the decision making process and information handling for tactical level of management and standardized the business operation, but for operation level of management after the implementation they are thinking that work load has increased because larger amount of data is required to be filled in the computer and it takes more time.

### Age Wise:-

$H_{06}$ : There is no significant difference in the satisfaction level between the age group of 25-40 and the age group of 41-56.

$$\bar{X}_1 = 64.28 \quad \bar{X}_2 = 60.73$$

$$Z = 14.08$$

The null hypothesis is rejected at 5 percent level of significant. The users in the age group of 25-40 and the users in the age group of 41-56 differ significantly in their satisfaction level. The users in the age group of 25-40 are more satisfied then the users in the age group of 41-56. This may be because the employees in 25-40 age groups are more enthusiastic to know about any new field/concept/technology so they can easily learn and adapt it. The industry requires employees who have a holistic view of the overall business functions, with skills to help the organization succeed across the rapidly changing business environment (Gable, 1998).

Another Objective of a study was to find out the areas that affect satisfaction of the users. The respondents reported that the ERP implementation had improved their work which made them highly satisfied; while lowest satisfaction was found on the adoption of global practices. Therefore, the user preferred to work on the ERP package which is specifically made for particular industry and could satisfy unique business needs. According to Seethamraju (1999) a common weakness associated with many ERP is their lack of integration and inability to align its process with the rapidly changing business environment.

## Suggestion and Conclusion

The organization using the customized ERP packages is benefited in many ways, but the major benefit is that as the customized ERP packages are made according to the daily practices performed in an organization, so it can save the time and resource which were used earlier to train the employees. Also the customized ERP package provides the user satisfaction as it performs the similar task which was earlier done manually. It can be also seen from the result of the study, that among the various ERP packages TIM provides the maximum users satisfaction which is a textile specified ERP package. The trend today is that so many enterprises are changing from function-oriented business to process driven entities. ERP system enables this

not only at the information system level but also at the application level. Now ERP is dealing in almost every area. For an ERP solution, the human resource is as germane of the whole scheme and vendors provide ERP solution in a modular manner and here lies the beauty of whole ERP systems. The ERP packages simplify the decision making process and information handling at all the levels of management. The young and enthusiastic users of age group 25-40 prefer to work on the customized ERP package that provides standardized and simplified business operations.

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