

# Quality of ERP Implementation: Case Study of Select Indian Organizations

Firdous Bano<sup>+</sup>

Student, VI Semester, National Institute of Technology Raipur (India)

**Abstract.** This paper presents the findings of a study carried out to understand key quality issues for successful implementation of Enterprise Resource Planning (ERP) in Indian organizations. Few organizations in India have implemented ERP and many more are adopting watch and see strategy because of fear of success of such complex, people oriented and costly project. But, considering the benefits of successful implementation of such project worldwide, it is timely effort to understand issues in ERP implementation in India. An implementation may be of low quality if problem faced during and after implementation are not addressed properly and hence results in less overall benefits from ERP. It is therefore necessary for the management to anticipate such issues and address them timely. In this study, case studies of ERP implementation in two select Indian organizations are developed. The case is developed by collecting data from secondary sources. The findings suggests that change management, training of internal people and integration of ERP with other information systems are few key issues which necessitates management attention for quality implementation of ERP.

**Keywords :** ERP, Quality

## 1. Introduction

Organizations today are trying not only to achieve competitive advantage but also to maintain it. This is becoming possible by effective deployment of resources and business processes. The key to competitiveness lies in a solid information system infrastructure seamlessly aligned with core business process deployed for the delivery of high quality products and services to customers [1]. Around 1990, many firms in the world have started purchasing application software such as enterprise resource planning (ERP) systems. ERP systems is believed as organizations' most strategic computing platform. Despite of such strategic importance, many cases of failure of ERP implementation have been reported in the literature.

An ERP system enables an organization to integrate all the primary business process in order to enhance efficiency and maintain a competitive position. The Major business drives behind ERP implementations are: improving productivity, providing competitive advantage, and satisfying customer demands [2]. However, the projected benefits of improved productivity and competitive advantage could only be achieved by its quality implementation. ERP systems are commercial software packages that enable the integration of transaction-oriented data and business processes throughout the organization [3]. Because these systems affect so many aspects of company's internal and external operations, their quality implementation is critical to organizational performance and survival.

Today, many organizations worldwide are implementing ERP systems in place of the functional legacy systems that are not anymore well compatible with modern business environment. However, according to [4], the process of moving from functional applications to an ERP system is difficult and challenging. Additionally, the switch to ERP system is expensive and it requires development of new procedures, training and converting data [5].

Much has been written in the literature on implementation of ERP systems in organizations of developed countries. The literature has many case studies of both successful and unsuccessful ERP implementation. However, insights gained in industrialized countries cannot be applied directly in Indian organizations. This is so because developing countries with high birth rates and low labour cost structures have views and opportunities far different from those of mature industrialized nations with their shrinking labour populations

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<sup>+</sup> Corresponding author. Tel.: + 91-9039339472  
E-mail address: firdousnitrr@gmail.com

[6]. An implementation may be of low quality if problem faced during and after implementation are not addressed properly and hence results in less overall benefits from ERP. A number of factors inherent in the culture, government, and economy determine how successful ERP implementations can be achieved. Therefore, there is an urgent need to understand the implementation problems and address them timely so as to make sure of quality implementation. For the purpose, case studies of two big organizations operating in India are developed. Based on synthesis of findings, conclusions are drawn to help IT managers for quality ERP implementation.

## 2. Case Study

Case studies for two organizations operating in India namely Bhilai Steel Plant (BSP) and a Tata Iron and Steel Company (TISCO) is developed using secondary data. Both the cases and their analysis is presented in this section.

### 2.1. BSP

Bhilai Steel Plant, a unit of Steel Authority of India Ltd. is a public sector undertaking and was conceived under Indo-USSR Treaty in the 2nd Five year plan. This was in accordance with erstwhile government policy for strengthening economy and self-reliance through development of core sector. The plant is located at the central position of India, which is one of the major iron belt of India, and it is about 40 kilometer from Raipur, capital of Chhattisgarh. The captive mines of the plant located at Dalli- Rajahara supplies iron ore and lime stone used to be available from Nandini captive mines. At present limestone is procured from outside. The other major raw material, coal is purchased from outside either through import or from indigenous market. Bhilai Steel Plant, an integrated steel works, was commissioned in 1959 with production capacity of 1.0 million tonne of steel. In successive phases, capacity was enhanced to 2.5 and 4.0 million tonne in the year 1962 and 1984 respectively. Bhilai Steel Plant produces wide range of products. This includes Rails, Wire Rods, Plates and Merchant products. Bhilai steel plant is planning to expand its production to 7.0 MT by the year 2011-12.

**Need of ERP:** To compete in the market and to ingrate various business functions, Bhilai Steel Plant have decided to go for ERP solutions. According to official sources they were facing following challenges.

- Suitable definition of Products.
- Variant configuration for Raw
- Materials & Finished products.
- Products defined at intermediate levels to have a visibility of WIP.
- Product Grouping to suit planning & reporting.
- Reengineering and up gradation of surrounding systems to facilitate feeding of required data to ERP systems.

Finally, BSP has decided to go for ERP project named as Utkarsh. Utkarsh has Six Broad areas namely Production Planning, Plant Maintenance, Finance & Costing, Quality Management, Material Management and Sales & Distribution.

**ERP and Business Process:** Approximately 300 man-years of effort invested in implementing ERP. For the success of ERP about 2500 End users trained in SAP. Six broad business areas of BSP are covered through seventeen different modules of SAP. For proper integration of existing system with new ERP system, existing processes are mapped with to-be processes in ERP. To confirm proper integration, 174 scenarios were tested during integration testing of software. ERP became operational from 1<sup>st</sup> April 2009. In Bhilai Steel Plant, ERP facilitates Management Reporting, Analysis & Interpretation of business data. Data can be obtained from multiple business areas. Enterprise Portal is created to allow access via web. User access is made possible by defining only user name and software. It provides different level of access to the user. A communication desk is established to report or resolve any issue. The training and documentation has been given prime importance. User manual are prepared to make the things more clear.

**Benefits of ERP:** ERP was implemented in Bhilai Steel Plant in 2009. To assess the real benefits achieved by its implementation may take some more time. However, following major benefits has been observed due to implementation of ERP:

- Integration of business processes which is the main goal of ERP
- Online availability of stocks in the system to help in maintaining right inventory levels.
- Timely information in the form of standard reports is available online in the system for decision making.
- More Transparency in business operation as everybody has access to same data leading to better accountability and visibility.
- Order based manufacturing leading to complete integration between marketing, production, and quality and inventory and finance functions.
- Details of all the masters like items – Finished, Semi-finished, Stores & Spares and Raw Materials, Vendors- Suppliers & customers, Services are available in one central database.

## 2.2. TISCO

Tata Iron and Steel Company (TISCO) was established in 1907 by J N Tata at Jamshedpur in Bihar, India and is known to be one of the leading steel giants in India. TISCO is Asia's first and India's largest integrated private sector steel company. It has a state-of-the-art 3.5 million tonne steel plant and is capable of meeting the most rigorous demands of its customers worldwide. Tata Steel's products include hot and cold rolled coils and sheets, galvanized sheets, tubes, wire rods, construction re-bars, rings and bearings. The company has introduced brands like Tata Steelium (the world's first branded Cold Rolled Steel), Tata Shaktee (Galvanized Corrugated Sheets), Tata Tiscon (re-bars), Tata Pipes, Tata Bearings, Tata Agrico (hand tools and implements) and Tata Wiron (galvanized wire products).

**Need of ERP in TISCO:** TISCO faced two major problems from the systems that existed for a long time. Firstly they were not customer friendly. The whole system was tuned to the process and very little attention was paid to the customer demands. Secondly the systems were outdated and the modalities of operation were too complex and not error free. The then existing technology was a simple replication of the manual system with islands of information. The employees and management at TISCO were facing a cumbersome task exchanging and retrieving information from the system. The management at TISCO wanted the software to seamlessly integrate with its existing information system and further provide compatibility with its future implementations. After an in-depth study of functionality, cost, time, compatibility, esteem, operability, support, and future organizational requirements, TISCO decided to go for ERP. TISCO made several considerations before choosing an ERP because they were aware that customers are extremely demanding in the iron and steel fields. They carefully examined every single area inside the organization, their needs, their common activities and detected several possibilities of improving the quality of their daily tasks.

Managing Director Sri B. Muthuraman says- "Implementing any ERP system is a challenge for an organization because of the declining success rate of ERP implementations world-wide. The real challenge was to build a conducive environment where SAP will be embedded in the hearts and minds of the people and the customers of TISCO."

They finally found an ERP compatible with their specifications, and they even evaluated how their future operations would perform if they implemented the chosen system. The company decided to implement SAP ERP 3 after careful consideration as it matched best with their requirements. The implementation process took almost a year in this case, due to the volume of operations and the major steps to be taken. However, there is one thing to keep in mind, and this is that TISCO never rested during the learning and adaptation process. That is why they experienced a substantial increase in their profits in a short period of time.

**ERP and Business Processes:** The path was set to achieve success through SAP. All the branches, which had huge numbers of transactions and complexity, were identified as a HUB while the smaller branches along with the consignment agents were defined as SPOKES which were attached to these branches. Preparatory task forces activities were conducted and core business processes were mapped to SAP modules. The business process was divided into two main segments. The core functions were denoted to be major ones. Similarly the supporting functions were named minor ones. A parallel activity called 'Change Management' was initiated within the company. The prime objective of 'Change Management' was to reach out to people involved non-directly in the project to apprise them of the developments taking place. The

company took all efforts to ensure that the change did not produce any sort of resentment in the organization. This was done by educating everyone on the need and desirability of change. In addition all apprehensions relating to change were discussed and clarifications made to the fullest satisfaction.

**Benefits of ERP:** The introduction of ERP solutions within Tata Steel has led to efficient business processes, enhanced customer service, reduced costs, improved productivity, accelerated transaction time, workflow management and reduction in the number of credit management errors. There have also been significant savings in manpower, inventory levels, and resource management. TISCO can now update its customers daily and provide seamless services across the country, improving customer management. The availability of online information has facilitated quicker and reliable trend analysis for efficient decision-making. Post the introduction of the ERP solution, the results have been terrific. Vice President (Finance) of the company Sri Ramesh C. Nadrajog, says “Tisco has spent close to Rs 40 crore on its implementation and has saved Rs 33 crore within a few months. This success could not be achieved without planned change management.” Manpower cost reduced from \$200 per ton to \$140 per ton in two years.

### 3. Conclusions

ERP systems have become vital strategic tools in today’s competitive business environment. In the present study, case studies of three Indian organizations have been developed and analyzed. It is concluded that quality implementation of ERP solution is tightly associated with managing people side of change. In fact, if ERP applications are correctly setup but the people side of change is not managed properly then expected benefits may not be achieved. It is imperative that the top management assume responsibility and drive change management throughout the implementation cycle. There is a need of changing mindset of internal people. For this training and awareness of internal people is equally important. This study is based on learnings from only two organizations. Future studies may be done on more number of organizations. Findings of such extended study will help to get more understanding on challenges and issues pertaining to India and hence more generalized conclusions can then be drawn.

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