ABSTRACT

Manufacturing Industries are facing changes at an increasing rate because of technology, market competition and socio-economical environment. It needs to redesign business procedures, automate the existing system and rethinking the scope of organization. Business Process Reengineering (BPR) is thus a set of radically changing processes based on sound principles with sufficient power to transform the complex organization.

BPR requires a cross-functional effort usually involving innovative applications of technology. It is an attempt to change the way, work is performed by simultaneously addressing all the aspects of work that impact performance. This includes the process activities, people’s jobs and reward system, the organization structure and the roles of process performers and managers, the management system and the underlying corporate culture that holds the beliefs and values that influence everyone’s behavior and expectations. With BPR, rather than simply eliminating steps or tasks in a process, the value of the whole process itself is questioned. It makes a significant break through with previous performance improvement approaches by requiring high levels of state-of-the-art Information Technology support.
Most of the organizations implemented reengineering on managerial judgment without proper guidelines and tried to measure the performance on profit and loss of the operations only. The systems are developed also to suit the financial accounting that relies on the overall income and expenses to monitor the manufacturing activities. Critical elements that contribute to the performance of manufacturing industries are plant operation, maintenance, inventory and energy. They need to be measured and controlled continuously. The objectives of the research are to identify the critical areas that contribute to improve the manufacturing effectiveness using online information, implement process reengineering in those identified areas to improve the manufacturing effectiveness; monitor and control the continuous process improvement and generalize a model for successful implementation of BPR in manufacturing industries.

Daily transaction data are captured and stored in all organizations. The accurate and timely data collection and analysis of using fitting tools have bearing on decisions. In this research, the methodology followed is to study the present performance of the manufacturing unit operation from the available data, review the literature on BPR towards finding a suitable approach for successful implementation, design and development of Manufacturing Effectiveness and Process Improvement Model (MEPIM). MEPIM is a process improvement model that requires continuous process assessment and an organized use of information to find easier and better ways of doing work, as
well as streamlining the manufacturing activities through fact-based management to ensure that the products are manufactured at minimum cost and less wastages. BPR is implemented using MEPIM with the help of Integrated Management System and accessing the relevant information through Data warehousing and OLAP. The improvements in reengineered process are analyzed using Pivotal Table and Chart.

The result of this research shows significant benefits from the BPR experience in several areas, such as productivity, employee satisfaction and organization competitiveness. The improvements are very much drastic in capacity utilization, improvement in product quality, increase in production efficiency, reduction in inventory cost, wastage reduction, reduce machine down time, minimize maintenance cost, reduced energy cost and water consumption.