

## Availability Analysis of Process Management in the Equipment Maintenance and Repair Implementation

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**Abstract :** It is an important issue that the occurring of production downtime and repair costs when machines fail in the machine intensive production industries. In the case of failure of more than one machine at the same time, which machines will have the priority to repair, how to determine the optimal repair time should be allotted for this machines and how to plan the resources needed to repair are the key issues. In recent years, Business Process Management (BPM) technique, bring effective solutions to different problems in business. The main feature of this technique is that it can improve the way the job done by examining in detail the works of interest. In the industries, maintenance and repair works are operating as a process and when a breakdown occurs, it is known that the repair work is carried out in a series of process. Maintenance main-process and repair sub-process are evaluated with process management technique, so it is thought that structure could bring a solution. For this reason, in an international manufacturing company, this issue discussed and has tried to develop a proposal for a solution. The purpose of this study is the implementation of maintenance and repair works which is integrated with process management technique and at the end of implementation, analyzing the maintenance related parameters like quality, cost, time, safety and spare part. The international firm that carried out the application operates in a free region in Turkey and its core business area is producing original equipment technologies, vehicle electrical construction, electronics, safety and thermal systems for the world's leading light and heavy vehicle manufacturers. In the firm primarily, a project team has been established. The team dealt with the current maintenance process again, and it has been revised again by the process management techniques. Repair process which is sub-process of maintenance process has been discussed again. In the improved processes, the ABC equipment classification technique was used to decide which machine or machines will be given priority in case of failure. This technique is a prioritization method of malfunctioned machine based on the effect of the production, product quality, maintenance costs and job security. Improved maintenance and repair processes have been implemented in the company for three months, and the obtained data were compared with the previous year data. In conclusion, breakdown maintenance was found to occur in a shorter time, with lower cost and lower spare parts inventory.

**Keywords :** ABC equipment classification, business process management (BPM), maintenance, repair performance

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