Abstract

Foundry Division of PT. Barata Indonesia demonstrates the highest level of complexity compared to other divisions. The use of resources is often inefficient which potentially affect the low productivity level. This study tried to identify any waste which probably occurred in the production process that might bother the level of productivity.

The study began with measuring productivity by using Objective Matrix (OMAX) based on some criteria of partial productivity. Subsequently, an approach of lean manufacturing was utilized to identify type of waste which mostly occurred. The methods used here are Process Activity Mapping, Supply Chain Response Matrix and Quality Filter Mapping as well. Finally, the root cause of each waste was analyzed in order to design a proper recommendation for minimizing waste and increasing productivity.

The result of OMAX represented the monthly productivity index for each criterion declined on November and February while lean manufacturing resulted the largest amount of waste are defect and waiting. Some recommendations for instance: parallel system of pattern & core making, giving the SOP compliance board, structuring tools in the furnace, do quenching & tempering with the time span of less than eight hours, and improve preventive maintenance system are proposed in the final chapter in order to decrease waste and improve productivity.

**Keywords:** Productivity, Objective Matrix (OMAX), Lean Manufacturing, Value Stream Analysis Tools (VALSAT)
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