

Analysis of the Application of Lean Manufacturing in Reducing Waste in Bottled Drinking Water (AMDK) Products: Case Study Beverage Industry

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Abstract. Lean is a continuous improvement effort to eliminate waste, increase the added value of products (goods and/or services), and provide value to customers (customer value). Waste is something that often happens to companies. This can affect the efficiency and productivity of the company so it can cause losses. PT. XYZ is a company engaged in manufacturing that produces food and beverages. This research focuses on the manufacture of beverage products and this product has the highest demand every month. Based on the results of the initial observation made by interviewing the company experts and direct observation, it is known that there are indications of related problems. This research aims to identify waste and analyze the root cause of the problem in the PT. XYZ. Therefore, to reduce the waste that occurs, it is necessary to apply a Lean Manufacturing approach that uses several tools such as Value Stream Mapping (VSM) to visualize the flow of materials from raw materials to finished products, Process Activity Mapping (PAM) to facilitate the identification of activities because the classification of activities is into five types and Fishbone Diagram to find the root cause of the waste that occurs until the end. waste can be reduced or eliminated. The results of this research get the results that there is a reduced cycle time from 2,33 hours to 2,24 hours and a reduced lead time from 8,45 days to 8,02 days on future big state mapping. From the result of the improvement, it was found that the increase in value-added activity from 87,61% to 91,00%, the necessary but non-value added decreased from 8,83% to 6,33% and the nonvalue added decreased from 3,56% to 2,67% based on process activity mapping. Based on process activity mapping and fishbone diagram, some recommendations were formulated to reduce waste namely scheduled training for operators (refreshment), replacing machines, and improving working methods.

Keywords: lean manufacturing, waste, value stream mapping, process activity mapping, fishbone diagram