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Optimization of a Production Layout Model to Increase Production Efficiency in Small Medium Enterprises

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Abstract:

Considering sustainability in current manufacturing industry under the worldwide situation of aggressive competition, a productive action measure needs to be done in order to reduce or eliminate the idle and/or down time of an operation. Therefore, it will improve the current production efficiency and working method in the company itself. A case study has been carried on facility and process layout analysis of a small and medium sized enterprise (SME) in a manufacturing company that produces coffee product in Malaysia. The whole production layout suffers due to the absence of established standard time for activities carried out by workers, the non-value added (NVA) activities involved and the inefficient methods. The goal of this case study is to improve the production efficiency of the current production layout by identifying and minimizing unnecessary activities at the bottleneck in production line. This study is conducted through time study technique to estimate the time allowed to a qualified and well-trained worker on normal situation to complete a specific task. The new layout has been designed and compared with the current layout. Subsequently, the WITNESS simulation software was applied also to verify and validate all proposals to improve the production layout. The result shows through improving the working method and rearranging the layout. Thus, it will possible to well balancing the process flow as well as ensuring better financial benefits to the company.