

## ABSTRACT

*This study aims to show the effect of lean manufacturing approach on improving the efficiency of manufacturing production lines at PT. XYZ.. The focus of the object under study is the components part of MG 200 Bangladesh train. Based on company data in December 2018 until February 2019, it is known that the web stiffener cross beam production process has been delayed so that it will have an impact on product delivery time to assembly line cross beam. With these problems, the problem was identified using a lean manufacturing approach through mapping the value stream mapping (VSM) current state and mapping activities for each process using process activity mapping (PAM). The identification results indicate that there is some waste, for the largest percentage of waste is waste waiting at 57.66%. Therefore, it is necessary to make improvements to minimize waste waiting. To find out the root cause of the problem that has been added, it will be identified using a fishbone diagram. Furthermore, the design stage of the proposed improvement to the problem to determine the causes of waste waiting by using a predetermined design is the scheduling of changes to spare parts damage, maintenance sheets in the form of check sheets, the design of poka yoke. After designing the proposed improvement, it will be mapped again using the value of the future state mapping stream to see the differences before and after improvement. Based on the proposed improvement plan, the future lead time of value stream mapping (VSM) state is mapped, it reduces to 164.68 minutes.*

*Keywords: Web Stiffener Cross Beam, Lean Manufacturing, Value Stream Mapping, Process Activity Mapping, Waste Waiting, Fishbone Diagram*