

ENHANCING THE ROLE OF QUALITY ASSURANCE SUPPORT IN
COMPONENT WARRANTY CLAIMS THROUGH BIG DATA ANALYSIS IN
COMPONENT REMANUFACTURING BUSINESS

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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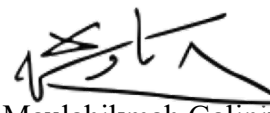
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ABSTRACT

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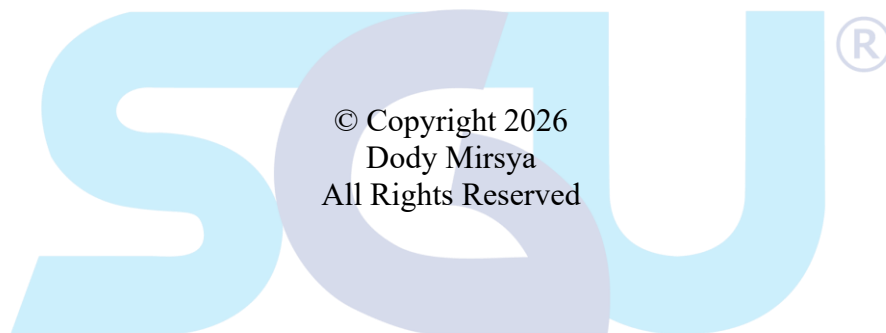
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The remanufacturing business in the heavy equipment industry requires quality product and warranty to ensure operational sustainability and customer satisfaction. Quality Assurance (QA) PSDOBD tends to function reactively rather than as a strategic decision-support role in warranty claim component. This research aims to enhance the role of QA in warranty claim processes through digital transformation using an EDI Monitoring. The study adopts an action research methodology based on the Plan–Do–Check–Act (PDCA) cycle. Quantitative performance data were focusing on KPIs QA that affected to performance component and cost reduction claim. Qualitative insights were obtained through observation and stakeholder discussions. The implementation of the digital EDI Monitoring system significantly improves QA support. It's indicated an achievement of 4 major KPIs QA can be reached target such as lead-time resolution from 6 to 6 days, lead-time reporting from 8.1 to 4.9 days, OTIF report submission from 62% to 91%, and joint quality from 81% to 87%. Then, the strategy implementation can reduce the component problem ratio from 14% to 13%. The warranty claim ratio increased from 71% to 97%. This study concludes that digital data integration and visualization through EDI Monitoring strengthen the strategic role of Quality Assurance in remanufacturing warranty management. It is recommended that future developments focus on system integration and advanced analytics to support continuous improvement and long-term business sustainability.

Keywords: *Quality Assurance, Remanufacturing, Warranty Claim, Digital Transformation, EDI Monitoring.*



DEDICATION

I dedicate this thesis to my beloved Parents, Wife, Children, Friends, Lecturers, and Beloved Company of PT. United Tractors Tbk. has supported my studies to date.



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During this Bridging Program lecture, I got a very useful and meaningful learning experience through a quality curriculum and programs of international standard.

Hopefully the knowledge I get in the future can be my provision to increase my potential to be more useful for my family, company, nation and state.



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