

**IMPROVEMENT OF FORECASTING & INVENTORY CONTROL FOR  
OPTIMIZING INVENTORY AT PT UNITED TRACTORS SITE MUARA TIGA  
BESAR**

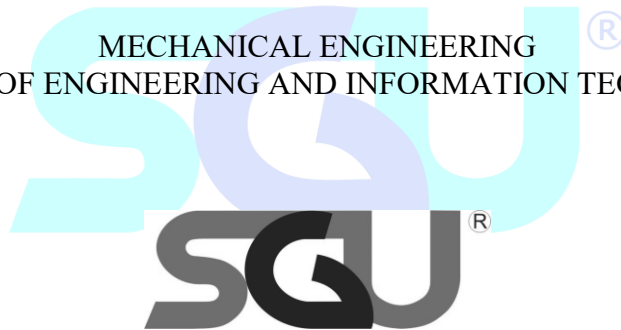
By

Muhammad Ridho Fabio  
22352028

I propose to the Advisors and to the Committee Members a study of the afore mentioned  
topic to be carried out in partial fulfilment of the requirements for the

MASTER'S DEGREE  
in

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FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY



SWISS GERMAN UNIVERSITY  
The Prominence Tower  
Jalan Jalur Sutera Barat No. 15, Alam Sutera  
Tangerang, Banten 15143 - Indonesia

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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.

Muhammad Ridho Fabio, ST

\_\_\_\_\_  
Student

\_\_\_\_\_  
Date

Approved by:

Dr. Aditya T. Pratama, S.Si., M.T

\_\_\_\_\_  
Thesis Advisor

\_\_\_\_\_  
Date

Dr. Ir. Gembong Baskoro, M.Sc., IPU, ASEAN Eng., ACPE, APEC Eng

\_\_\_\_\_  
Thesis Co-Advisor

\_\_\_\_\_  
Date

Dr. Ir. Maulahikmah Galinium, S.Kom, M.Sc

\_\_\_\_\_  
Dean of Faculty Engineering and Information Technology

\_\_\_\_\_  
Date

## ABSTRACT

### IMPROVEMENT OF FORECASTING & INVENTORY CONTROL FOR OPTIMIZING INVENTORY AT PT UNITED TRACTORS SITE MUARA TIGA BESAR

By

Muhammad Ridho Fabio Students

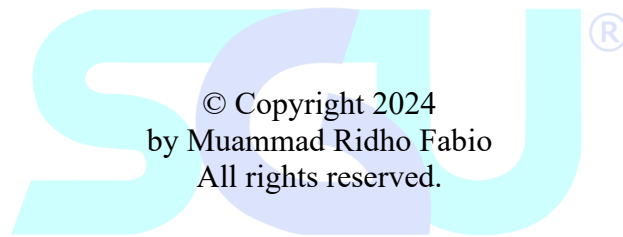
Dr. Aditya T. Pratama, M.Si. Advisor

Dr. Ir. Gembong Baskoro, M.Sc., IPU, ASEAN Eng., ACPE, APEC Eng Co-Advisor

SWISS GERMAN UNIVERSITY

PT United Tractors, Muara Tiga Besar site, is one of the company's sites in Indonesia, responsible for accurately meeting customer demands in terms of timeliness, quantity, and quality. Ineffective and inefficient inventory management leads to idle capital and increased inventory costs, such as storage expenses and other inventory-related risks. Currently, PT United Tractors Muara Tiga Besar site has not yet optimized its inventory management, as evidenced by the Days of Inventory (DOI) performance in 2024 showing an upward trend, with the performance in May 2024 reaching 81.9 days. Therefore, this study aims to improve the DOI performance to meet the established targets. The root cause of the problem was identified using the 5 Why Analysis method, followed by generating ideas and solutions for improvement. The chosen solutions include forecasting using the Simple Moving Average method and inventory control through the Periodic Review and Continuous Review Systems. The research results indicate that forecasting with this purpose method effectively reduces DOI performance to 72 days, while inventory control using the Continuous Review System significantly reduces storage costs by 49%, achieving a more efficient outcome.

*Keywords: DMAIC, 5 Why Analysis, Forecasting, Simple Moving Average, Periodic Review System, Continuous Review System*



## DEDICATION

Alhamdulillah, all praise be to Allah SWT for His blessings and grace. Peace and blessings be upon the noble Prophet Muhammad SAW. I extend my deepest gratitude and highest appreciation to the following parties:

1. Allah SWT, the Almighty, to whom I am deeply grateful for all the blessings that have given me strength and guidance to stay on the right path.
2. My extended family, especially my beloved parents, my wife, and our children. Thank you for your love, time, prayers, attention, support, motivation, and invaluable sacrifices that have enabled me to complete this thesis.
3. My exceptional advisors, Dr. Aditya T. Pratama, M.Si., and Dr. Ir. Gembong Baskoro, M.Sc., IPU, ASEAN Eng., ACPE, APEC Eng. Thank you for the time and guidance you have provided, which has allowed me to complete this thesis. ®
4. All the inspiring lecturers, whose names I cannot mention one by one. Thank you so much for your time and participation in the process of completing this thesis.
5. To the company we cherish, PT United Tractors, may it continue to grow and thrive. “UT Jaya, Keluarga Bahagia!”

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The completion of this final project would not have been possible without the assistance of various parties. These individuals have significantly contributed, both directly and indirectly, to the research process and the preparation of this final project, offering scientific, moral, and material support. On this occasion, the author would like to extend heartfelt gratitude to:

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The author acknowledges that this final project is far from perfect. Therefore, constructive criticism and suggestions are greatly appreciated for further improvement.

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