

**Leveraging Technology and Human Capital Development for Productivity
Enhancement, A Study Case of The Transformer Project**

By

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22452042

MASTER'S DEGREE

in

ENGINEERING MANAGEMENT

MASTER OF MECHANICAL ENGINEERING

FACULTY OF ENGINEERING & INFORMATION TECHNOLOGY



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Revision After Thesis Defenses on August 19, 2025

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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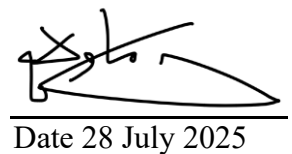
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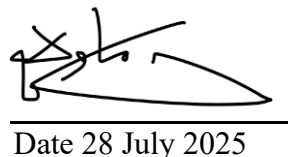
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ABSTRACT

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Enhancing mining productivity requires not only technical upgrades but also the integration of digital monitoring and workforce development. This study examines the role of Prodigy (real-time monitoring) and Coretana (competency development) in improving Komatsu PC1250 excavator performance at PT XYZ under The Transformer Project. A mixed-method approach was applied, combining Focus Group Discussions, Root Cause Analysis, and a TAM-based survey validated with SEM. Results showed that although operators perceived the tools as useful and easy to use, the structural model had weak explanatory power (R^2 for Behavioral Intention = 5.6%) and no significant paths, indicating adoption is driven more by organizational enforcement and KPI alignment than individual perceptions. Nevertheless, operational outcomes demonstrated strong gains: productivity rose 47%, cycle time fell 12%, bucket fill factor improved 8%, idle time dropped 15%, fuel efficiency rose 10%, physical availability increased 6%, and operator competency improved 19%. Theoretically, this study highlights the limits of TAM in industrial settings and suggests extended models (TAM2/UTAUT), while practically showing that combining digital tools with human capital development drives sustainable productivity.

Keywords: Mining productivity, Prodigy, Coretana, TAM, KPI improvement, digital transformation, operator competency.



DEDICATION

This thesis is dedicated to My beloved little family — my wife Gung Is, and our children Kinan and Anka — for their endless love, support, and patience throughout this academic journey. My big family, for their continuous encouragement and prayers. PT United Tractors, my second home and a source of growth and inspiration.

May this work bring meaningful contributions to the company, and ultimately, to the advancement of our beloved country.



ACKNOWLEDGEMENTS

First and foremost, I would like to express my sincere gratitude to Assoc. Prof. Dr. rer. nat. Filiana Santoso., my thesis advisor, for her invaluable guidance, encouragement, and academic mentorship throughout this research journey. Her insight has been instrumental in shaping the quality and depth of this study, particularly in refining the analytical methods and ensuring the practical relevance of the findings.

I would also like to extend my heartfelt appreciation to Dr. Maulahikmah Galinium, S.Kom, M.Sc, my co-advisor and thesis examiner, for his critical feedback, technical insights, and continuous support. His direction—especially on the integration of the Technology Acceptance Model (TAM), the development of the research framework, and the emphasis on evidence-based conclusions—was crucial in enhancing the rigor and clarity of this thesis.

Special thanks go to Assoc. Prof. Dr. Ir. Gembong Baskoro, M.Sc., IPU, ASEAN Eng., ACPE, APEC Eng., the former Dean, whose leadership laid the foundation for academic excellence at Swiss German University.

I am sincerely thankful to PT United Tractors for the opportunity to contribute to The Transformer Project, and to the teams at PT XYZ and the Application Engineering Division for their collaboration during data collection and field validation. I also deeply appreciate the participation of site managers, instructors, mechanics, and HR personnel in the Focus Group Discussions (FGDs) and surveys, whose input made this research possible.

Lastly, to my beloved wife Gung Is, and our children Kinan and Anka, as well as to my extended family—thank you for your endless love, patience, and prayers. Your support has been the foundation of my resilience. I dedicate this work to you all, with the hope that it brings lasting contributions to the company and our nation

TABLE OF CONTENTS

	Page
STATEMENT BY THE AUTHOR.....	2
ABSTRACT.....	3
DEDICATION.....	5
ACKNOWLEDGEMENTS.....	6
TABLE OF CONTENTS.....	7
LIST OF FIGURES	9
LIST OF TABLES.....	10
CHAPTER 1 - INTRODUCTION.....	11
1.1 Background.....	11
1.2 Research Problems.....	13
1.3 Research Objectives.....	14
1.4 Research Question	15
1.5 Hypothesis.....	15
1.6 Research Scope	15
1.8 Significance of the Study.....	16
CHAPTER 2 - LITERATURE REVIEW.....	18
2.1 Theoretical Perspectives	18
2.2 Previous Studies.....	23
CHAPTER 3 – RESEARCH METHODS	33
3.1 Problem Statement.....	33
3.2 Root Cause.....	39
3.3 Mapping of Survey Items to Technology Acceptance Model (TAM) Constructs.....	44
3.4 Propose Solution Lean Six Sigma (DMAIC).....	46
3.5 Application Engineering – PC1250 Evaluation	50
3.6 Prodigy Digitalization Program	52
3.7 CSCD Program	55
3.8 Coretana	56
3.9 Rationale for Choosing Real-Time Monitoring and Training as Strategic Interventions (with SEM Integration).....	58
3.10 KPI Definition and Calculation	60
3.11 Triangle Support Model.....	61

CHAPTER 4 – RESULTS AND DISCUSSIONS.....	63
4.4 Summary of FGD Results.....	64
4.5 Root Cause Analysis of PC1250 Productivity Issues	67
4.6 Result of TAM-Based Survey on Prodigy and Coretana Usage.....	72
4.7 Structural Equation Modeling (SEM) Analysis Based on TAM Constructs	76
4.8 Initial Evaluation.....	83
4.9 Data Analysis	84
4.10 Operator Training Impact Summary	85
4.11 Post-Intervention Performance Evaluation	87
4.12 Limitations	90
4.13 Summary	91
CHAPTER 5 – CONCLUSION AND RECOMMENDATIONS	93
5.1 Conclusion	93
5.2 Recommendations.....	94
5.3 Limitations of the Study.....	95
5.4 Future Research Suggestions	96
GLOSSARY	97
REFERENCES	100
APPENDIX.....	104
Appendix A - Program Implementation Timeline & Technical Documentation	104
Appendix B - Thematic Matrix of FGD Results.....	107
Appendix C – FGD Coding Summary Table.....	109
Appendix D - TAM Survey	110
Appendix E – TAM Survey Visualization.....	112
Appendix F – Draft Standard Operating Procedure (SOP) for Digitalization Intervention	114

LIST OF FIGURES

Figures	Page
1.1 Mining Heavy Equipment.....	11
1.2 Standard Productivity Excavator	12
1.3 Productivity PC1250.....	14
3.1 Research Framework	33
3.2 Lean Six Sigma DMAIC.....	46
3.3 Optimum Bench Height	51
3.4 Architecture Diagram of Prodigy.....	53
3.5 Use Case of Prodigy.....	53
3.6 Activity Diagram of Prodigy	54
3.7 Concept of Prodigy	55
3.8 Architecture Diagram of Coretana.....	56
3.9 Use Case of Coretana.....	57
3.10 Activity Diagram of Coretana.....	58
3.11 Flowchart Intervention Model for Enhancing Heavy Equipment Productivity...59	
3.12 Architecture diagram- triangle Support Model.....	61
4.1 Coretana Apps Login	66
4.2 Coretana Online Learning.....	66
4.3 Prodigy Apps	67
4.4 Fishbone Analysis Low Productivity PC1250.....	68
4.5 Average TAM Scores by Position	75
4.6 Average TAM Survey Results	75
4.7 Production Trend PC1250.....	92
A.1 Preparation for Intervention Program January 2025.....	104
A.2 Intensive offline training sessions – February 2025	104
A.3 Full-scale deployment of the Prodigy application for real-time monitoring – March 2025	105
A.4 Post-training supervision and mentoring by instructors and supervisors: April-May 2025	105
A.5 Result Project Evaluation.....	106
A.6 Post-intervention data collection (productivity, cycle time, idle time) - June 2025	106

LIST OF TABLES

Table	Page
2.1 Comparison of Technology Acceptance Models	22
2.2 Key Similarities and Differences Baladi's Thesis	25
2.3 Key Similarities and Differences Smith's Study	26
2.4 Key Similarities and Differences Hung's Study	28
2.5 Key Similarities and Differences Venkatesh's Study	30
2.6 Key Similarities and Differences Abbass's Study	32
3.1 Program Implementation Timeline	38
3.2 Design Mapping of Survey Items to TAM Constructs	45
3.3 KPI Definition and Calculation	60
4.1 Root Cause Prioritization Matrix	70
4.2 Result Mapping of Survey Questions to TAM Constructs	73
4.3 TAM Survey Result	74
4.4 Summary of Mean Scores by TAM Construct	74
4.5 Response Distribution for PU1	76
4.6 Measurement Model (Reflective)	77
4.7 Fornell–Larcker Criterion	78
4.8 HTMT Ratio.....	78
4.9 Path Coefficients (Bootstrapped Estimates)	79
4.10 Coefficient of Determination (R^2).....	80
4.11 Effect Sizes (f^2)	80
4.12 Indirect Effects (Mediation).....	81
6.1 Glossary	99
B.1 FGD Results	108