

IMPROVING SUPPORT OF OVERHAUL DEPARTMENT  
PT. UNITED TRACTORS THROUGH DIGITAL DATA ANALYSIS  
FOR SUSTAINABILITY BUSINESS REMANUFACTURING COMPONENT

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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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## ABSTRACT

### IMPROVING SUPPORT OF OVERHAUL DEPARTMENT PT. UNITED TRACTORS THROUGH DIGITAL DATA ANALYSIS FOR SUSTAINABILITY BUSINESS REMANUFACTURING COMPONENT

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*PT. United Tractor as a distributor of Komatsu heavy equipment has increase revenue 30% from 2022 in 2023, one of which was due to an increase demand for remanufacturing component, subsidiary from PT. Komatsu Remanufacturing Asia (KRA). In the business organizational structure of PT. United Tractors has an Overhaul Business Department (UTOD). There are three Sections in the UTOD that control and monitor the remanufacturing component business. There is no system available to integrate the three monitoring databases in each of these Sections so that the component monitoring databases cannot be accessed from each other. To find out and monitor the staggering process of component turnover, a system was developed that can integrate the three monitoring data in Section UTOD in the form of dashboard visualization and automatic reminder if the staggering process does not meet the target This research refers to the Business Intelligence Roadmap method which consists of six stages of processes, starting from the stage of justification for the problems that occur, planning the system to be carried out, Analysis of business needs, design and construction of the system to be made and also the implementation of the Business Intelligence Supporting System. The results obtained show that the dashboard and the system built are functioning well. The results of the User Acceptance Test dashboard reached 100% functioning and the results of the User Experience Questionnaire (UEQ) from the respondents were at an excellent level. The use of this business intelligence supporting system at UTOD can help in accelerating the staggering process of remanufacturing components. The component turnover cycle decreased in 2024 to 69 days from the previous one in 2023 at 126 days. With this decrease, it will make the turnover of warrant component production at PT. KRA will increase by 2 more components. This research recommends that the use of digital platforms be emphasized in every member of UTOD. The development of this dashboard is also expected to use a better digital platform for a better user interface and user experience in the future.*

**Keywords:** Monitoring, remanufacturing, data integration, business intelligence

## ABSTRAK

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PT. United Tractor sebagai distributor alat berat Komatsu mengalami kenaikan *revenue* 30% di tahun 2023 dibandingkan tahun 2022, salah satunya karena kenaikan permintaan komponen *remanufacturing*, di anak perusahaan PT. Komatsu *Remanufacturing Asia* (KRA). Di dalam struktur organisasi bisnis PT. United Tractors terdapat Overhaul Business Department (UTOD) terdapat tiga *Section* di Overhaul Business Department (UTOD) yang melakukan kontrol dan *monitoring* dalam bisnis komponen *remanufacturing*. Tidak ada sistem yang tersedia untuk mengintegrasikan ketiga database *monitoring* di masing-masing *Section* tersebut sehingga database *monitoring* komponen tidak bisa diakses satu sama lainnya. Untuk mengetahui dan memonitor *staggering* proses perputaran komponen maka di-develop sistem yang dapat mengintegrasikan ketiga data *monitoring* di *Section* UTOD dalam bentuk visualisasi *dashboard* dan *automatic reminder* apabila *staggering* proses tidak memenuhi target. Penelitian ini mengacu kepada metode *Business Intelligence Roadmap* yang terdiri dari enam proses tahapan, mulai dari tahapan justifikasi atas permasalahan yang terjadi, perencanaan sistem yang akan dijalankan, analisa atas kebutuhan bisnis, desain dan konstruksi sistem yang akan dibuat dan juga implementasi *business intelligency supporting system*. Hasil yang diperoleh menunjukkan bahwa *dashboard* dan sistem yang dibangun berfungsi dengan baik. Hasil *User Acceptance Test dashboard* mencapai 100% berfungsi dan hasil *User Experience Questionnaire* (UEQ) dari responden berada pada level *excellent*. Pemanfaatan *bussiness intelligence supporting system* ini di UTOD dapat membantu dalam percepatan *staggering* proses perputaran komponen *remanufacturing*. Siklus perputaran komponen turun pada tahun 2024 menjadi 69 hari dari yang sebelumnya di tahun 2023 di 126 hari. Dengan penurunan ini akan membuat perputaran produksi komponen *warrantu* di PT. KRA akan meningkat 2 komponen lebih banyak. Penelitan ini merekomendasikan penggunaan *platform digital* lebih ditekankan dalam setiap *member* di UTOD. Pengembangan *dashboard* ini diharapkan juga bisa menggunakan *platform digital* yang lebih bagus agar *user interface* dan *user experience* lebih baik ke depannya.

Kata kunci : *Monitoring, remanufacturing, integrasi data business intelligence*

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## LEMBAR PERSEMBAHAN

Thesis ini saya persembahkan kepada Orangtua, Istri, Anak-anak, Teman-teman, Dosen, dan Perusahaan tercinta PT. United Tractors Tbk. yang telah mendukung studi saya sampai saat ini.

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