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Analysis Of The Role Of Car Spareparts Sales Applications As A Digital Transformation Strategy In Four-Wheel Vehicle Service Companies

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***Abstract* - Digital transformation is essential for four-wheel vehicle service companies to enhance competitiveness and operational efficiency. One widely adopted strategy is the use of car spare parts sales applications integrated with workshop services. This study aims to analyze the role of such applications as a digital transformation strategy in four-wheel vehicle service companies. A descriptive qualitative approach was employed through direct observation, in-depth interviews with business owners and operational managers, and documentation analysis. The findings show that the application improves inventory control, accelerates transaction processes, enhances financial record accuracy, and supports better coordination between sales and service activities. However, challenges related to employee adaptation and system integration were identified. The study concludes that car spare parts sales applications play a significant role in supporting digital transformation, and their effective implementation requires strong management support, employee training, and continuous system development to achieve sustainable business performance.**

Keywords— ***Digital Transformation; Spare Parts Sales Application; Vehicle Service Companies; Information Systems***

I. INTRODUCTION

Digital transformation [1] has become a strategic necessity for four-wheel vehicle service companies [2] in response to rapid technological development and increasingly intense competition [3]. Customers demand fast, accurate, and transparent services, while companies are required to manage complex operational activities efficiently. In this context, the adoption of digital systems is essential to support service quality and business sustainability [4].

Most previous studies examine digital systems in automotive services separately focusing on inventory, sales, or customer service without analyzing how a single integrated application can function as a comprehensive digital transformation strategy. This study fills that gap by positioning the car spare parts sales application at PT. Auto Kool Prima as a strategic tool that integrates operational, financial, and service processes. Therefore, this research aims to directly analyze its strategic role in enhancing efficiency, performance, and competitiveness in the fourwheel vehicle service industry.

However, many vehicle service workshops still rely on semi-manual or fragmented information systems [5]. These practices often lead to inefficiencies in spare parts management [6], transaction recording [7], and service coordination. Inaccurate inventory data [8], delays in service processing, and limited access to real-time information [9] can

negatively affect operational performance and customer satisfaction [10].

From a theoretical perspective, digital transformation emphasizes the strategic use of information systems to improve organizational processes, enhance decision-making [11], and create competitive advantage [12]. In service-based industries, digital applications enable process integration, data accuracy, and responsiveness to customer needs, making them a critical component of modern business strategies [13].

Previous studies have shown that the implementation of digital sales and inventory systems [14] can improve operational efficiency and service quality [15]. Research in the automotive and service sectors highlights the positive impact of integrated information systems on transaction speed and managerial control. Nevertheless, studies that specifically focus on the role of spare parts sales applications [16] as a comprehensive digital transformation strategy in four-wheel vehicle service companies remain limited.

PT. Auto Kool Prima, a four-wheel vehicle service company, was selected as the object of this research due to its adoption of a car spare parts sales application integrated with workshop service processes. The company represents a relevant case for examining how digital applications [17] are applied in real operational settings to support service and sales activities [18].

This study presents novelty by analyzing car spare parts sales applications not only as operational support tools but also as strategic instruments of digital transformation within PT. Auto Kool Prima. By examining the integration of spare parts sales, work order management, and reporting features, this research provides practical insights into the role of digital systems in improving operational efficiency and service quality.

Previous studies have emphasized the critical role of digital applications in improving operational efficiency and service quality across various industries. Digital platforms [19] help organize workflows more systematically, minimize mistakes in operations, and enable timely decision-making [20], which in turn strengthens a company's competitive position. These studies suggest that digitalization is not only a tool for automating routine tasks but also a strategic mechanism to enhance overall business performance [21].

In the automotive service sector [22], research has shown that information systems can significantly improve coordination between administrative staff and service technicians. Companies implementing digital sales and service applications experienced faster service delivery, improved transaction accuracy, and higher customer satisfaction. The study highlighted that structured digital documentation contributes to transparency and traceability, which are essential for maintaining consistent service quality [23].

Other studies have specifically focused on the management of spare parts [24] in vehicle service companies. The use of digital inventory management has been proven to reduce the risk of stockouts, limit surplus inventory, and increase the accuracy of financial reporting by automating transactions. Their research underscored that digital systems act as a bridge between operational efficiency and financial control, proving their strategic value for companies managing complex spare parts inventories [25].

Despite these insights, most previous research has either addressed general aspects of digitalization or focused on isolated operational areas such as inventory control or customer service. Few studies have examined the comprehensive role of a single application as a holistic digital transformation strategy integrating operational, financial, and service processes [26]. This gap indicates the need for research that explores how a car spare parts sales application can serve as a strategic tool for enhancing efficiency, service quality, and competitiveness in automotive service companies.

Therefore, the objective of this study is to analyze the role and significance of car spare parts sales applications as a digital transformation strategy at PT. Auto Kool Prima. The findings are expected to contribute to academic literature on digital transformation and provide practical recommendations for four-wheel vehicle service companies seeking to enhance their competitiveness through digitalization.

II. METHOD

This study employed a descriptive qualitative research design to examine the role of a car spare parts sales application as a digital transformation strategy in a four-wheel vehicle service company. A total of five participants were selected using purposive sampling, consisting of one business owner, two operational managers, and two administrative staff members directly responsible for managing spare parts transactions and service records. Participants were selected based on the following criteria: (a) actively using the application for at least one year, (b) directly involved in decision-making or operational processes related to spare parts sales and service management, and (c) having comprehensive knowledge of workshop operations before and after application implementation.

Data were collected through direct observation, semi-structured in-depth interviews, and document analysis, including transaction logs, inventory reports, and service documentation. The data analysis process followed several systematic steps. First, all interview recordings were transcribed verbatim. Second, open coding was conducted to identify significant statements related to operational efficiency, financial accuracy, service coordination, and digital integration. Third, similar codes were grouped into broader categories through axial coding, highlighting relationships between operational improvements and strategic digital transformation. Finally, these categories were synthesized into key themes representing the strategic role of the application in enhancing business performance and competitiveness. Data triangulation across interviews, observations, and documents was applied to ensure credibility and consistency of findings. This study was conducted independently without external funding to maintain objectivity and methodological rigor.

III. RESULTS AND DISCUSSION

The research was conducted at PT. Auto Kool Prima, a four-wheel vehicle service company that has implemented a car spare parts sales application as part of its digital transformation strategy. Descriptive results indicate that the application is used consistently in daily operational activities, particularly for service management and spare parts transactions. Based on descriptive observation, users access the system through the application home page, which functions as the main entry point for managing operational features (Figure 1).

Figure 1. Display of the application home page, which serves as an entry point for users when accessing the system.

The next result, as shown in Figure 2, indicates that the workshop work order serves as a fundamental document for recording and controlling the vehicle service process.

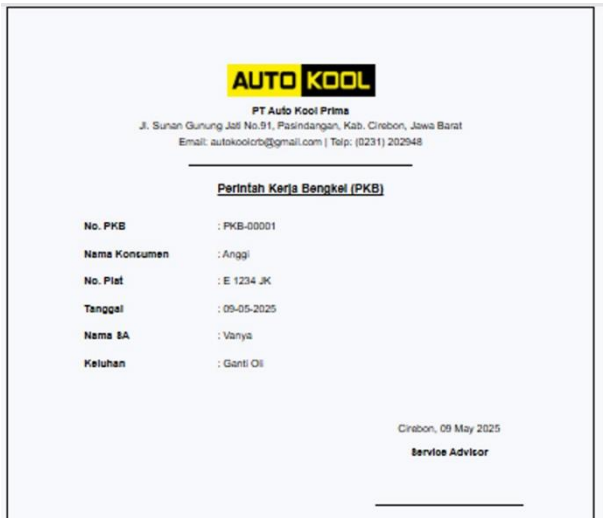

Figure 2 - The workshop work order serves as the basis for recording and controlling the vehicle service process

Figure 2 illustrates the workshop work order, which functions as a core document in managing and controlling the vehicle service process. The work order records essential service information, including customer data, vehicle identification, reported problems, and planned service actions. This structured documentation ensures that each service activity is clearly defined and systematically recorded from the initial service request to completion.

The implementation of a digital work order supports operational control and service traceability within the workshop. By integrating the work order with spare parts usage and service progress updates, the system enables better coordination between technicians and administrative staff. In the context of PT. Auto Kool Prima, this digital approach reduces manual errors, enhances service transparency, and improves overall service efficiency, thereby reinforcing the role of information systems in digital transformation.

The next result shows that the work order form consists of an alphanumeric code, customer name, vehicle license plate number, and a description of the vehicle problem. This structured information enables systematic identification and documentation of each service transaction. The purpose of this work order form is to ensure accurate service tracking, improve data organization, and support effective coordination between administrative staff and technicians during the vehicle service process.

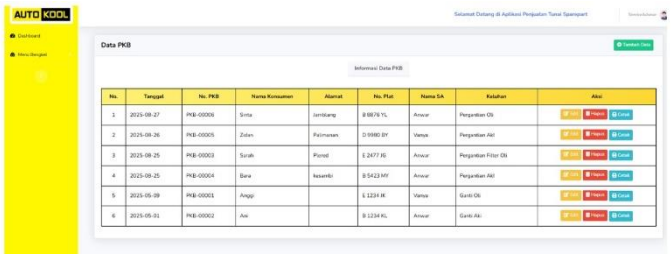

Figure 3. Displays the work order form consisting of letter number, customer name, vehicle plate number, vehicle problem.

Figure 3 presents the work order form, which consists of an alphanumeric work order number, customer name, vehicle license plate number, and a description of the vehicle problem. This structured format allows each service transaction to be uniquely identified and systematically documented, ensuring data accuracy and consistency throughout the service process.

The availability of detailed and standardized information in the work order form supports effective service tracking and communication between administrative staff and technicians. By clearly recording customer and vehicle details along with the reported issues, the system minimizes miscommunication and facilitates timely service execution. In PT. Auto Kool Prima, this digital documentation enhances operational control, improves service quality, and strengthens the reliability of service records for managerial and analytical purposes

The final result of this study is the spare parts sales report generated by the application. This report presents detailed information on spare parts transactions, including item types, quantities sold, transaction dates, prices, and total sales value. The report is produced automatically and updated in real time, allowing management to monitor sales performance and inventory movement accurately. The availability of structured and comprehensive sales data reduces manual reporting errors and enhances the reliability of financial and operational information within the company.

Figure 4. Spare parts sales report

Figure 4 presents the spare parts sales report generated by the application, which provides comprehensive information on spare parts transactions, including item details, quantities sold, transaction dates, pricing, and total sales values. This report is produced automatically by the system, allowing management to monitor sales activities and inventory movement in a structured and reliable manner without relying on manual data processing. The automated generation ensures consistency in data presentation and minimizes human errors that often occur in manual record-keeping.

The report is designed to provide a clear overview of daily, weekly, and monthly sales activities. Management can quickly identify trends such as peak sales periods, frequently purchased items, and declining sales of certain spare parts. This level of insight allows for proactive decision-making, enabling the company to adjust marketing strategies, optimize inventory stocking, and respond effectively to changes in customer demand.

In addition to transaction data, the report includes detailed pricing information for each spare part, facilitating accurate calculation of revenue and profit margins. By integrating sales data with inventory levels, the report helps management ensure that high-demand items are consistently available while reducing the risk of overstocking low-demand items. This alignment between sales and inventory management contributes directly to cost efficiency and operational optimization.

The report also serves as an analytical tool for evaluating the performance of different product categories. Management can assess which spare parts generate the highest revenue and which items contribute less to overall sales, supporting strategic decisions such as promotional campaigns, supplier negotiations, and pricing adjustments. This analytical capability enables data-driven decisions that enhance both financial performance and customer satisfaction.

Moreover, the report enhances coordination between the sales and service departments. By tracking which spare parts are used most frequently in vehicle repairs, the company can ensure that the availability of parts aligns with expected service demands. This reduces service delays, improves customer satisfaction, and strengthens overall operational efficiency.

Another important function of the report is to facilitate forecasting and procurement planning. Historical sales data, when analyzed over time, allow management to predict future spare parts demand with higher accuracy. This ensures that procurement schedules are optimized, inventory costs are minimized, and service operations are not disrupted due to stock shortages.

Finally, Figure 4 exemplifies how digitalization supports strategic management in automotive service companies. By providing comprehensive, real-time, and reliable data on spare parts sales, the system empowers managers to make informed decisions, enhance operational control, and achieve better alignment between sales, inventory, and service activities. The spare parts sales report, therefore, represents a key feature of the application that drives both efficiency and competitiveness in the company.

IV. CONCLUSIONS

Based on the results of this study, it can be concluded that the car spare parts sales application plays a vital role as a digital transformation strategy in improving operational efficiency, service quality, and overall competitiveness in four-wheeled vehicle service companies. At PT. Auto Kool Prima, the application provides a structured approach to managing service and spare parts activities, ensuring that processes are carried out systematically and in an integrated manner.

The application's features, including the home page dashboard, work order management, and spare parts sales reporting, enable faster processing and reduce the risk of operational errors. Real-time inventory tracking ensures that spare parts availability is continuously monitored, preventing service delays and improving responsiveness to customer needs. This feature also allows management to make informed decisions regarding procurement and stock management.

Coordination between administrative staff and technicians is significantly enhanced through the application. By digitizing communication channels and service documentation, employees can collaborate more efficiently, leading to smoother service operations and better task delegation. This integration reduces misunderstandings, accelerates workflow, and ensures that service requests are completed accurately and on time.

The use of digital work orders and structured service documentation enhances transparency and traceability within the service process. Every vehicle issue, maintenance action, and spare part used is clearly recorded, allowing management to monitor service quality and identify potential areas for improvement. Such structured records also build customer trust by providing clear and professional service documentation. From a theoretical perspective, this study contributes to the literature on digital transformation and information systems by demonstrating how a car spare parts sales application functions as a strategic tool in service-oriented companies. The findings provide empirical evidence that digital applications can support operational excellence, improve service quality, and strengthen competitive advantage in the automotive service industry.

Practically, the application has proven to enhance both internal and external performance outcomes. For internal

operations, it streamlines administrative processes, reduces manual errors, and improves resource allocation. Externally, it improves service delivery speed, increases customer satisfaction, and strengthens the company's reputation as a reliable and modern service provider. Despite these benefits, this study is limited to a single case study at PT. Auto Kool Prima and uses a qualitative research approach. This may restrict the generalizability of the results to other companies or industries. Future research could expand the scope by including multiple automotive service companies and employing quantitative or mixed-method approaches to validate and strengthen the findings.

Further research could also examine the long-term impact of digital applications on key performance indicators such as financial performance, customer retention, and market competitiveness. Investigating how employees adapt to technological changes over time and how management strategies influence the effectiveness of digital tools can provide deeper insights into sustainable digital transformation.

The adoption of a car spare parts sales application is not merely a technological upgrade but represents a strategic investment toward sustainable digital transformation. Continuous development of the system, combined with employee training and competency improvement, is essential to maximize the benefits of digitalization in service operations.

In conclusion, this study confirms that digital applications in automotive service companies provide significant strategic advantages. Strong management support, employee engagement, and continuous system enhancement are critical to realizing these benefits. By leveraging technology as a strategic tool, PT. Auto Kool Prima demonstrates that digital transformation is a key driver for improving operational efficiency, service quality, and long-term competitiveness in the automotive service industry.

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