

ABSTRACT

Efficient business processes are the key to achieving operational excellence in companies, including in controlling lead time for spare part procurement. PT TD Automotive Compressor Indonesia (PT TACI), as a car AC compressor manufacturing company, faces challenges in the timeliness and efficiency of the spare part procurement process due to the lack of system integration, many manual processes and uncertainty of spare part availability at suppliers. This study aims to design improvements to the lead time control business process by optimizing an integrated digital web-based system and strengthening agreements with suppliers. For this reason, this study was conducted to answer how the current spare part procurement process is, what are the main obstacles in controlling lead time, what is the role of digital technology and supplier agreements and what are the recommendations for process improvements based on Business Process Improvement (BPI).

The main theory used is Business Process Improvement (BPI) for process improvement design, supported by Supply Chain Management theory, lead time, and digital system integration. Previous research studies related to these theories are also used as references.

This study uses a qualitative case study approach with data collection methods through in-depth interviews and focus group discussions (FGD) with process owners. Data analysis is carried out thematically based on the BPI stages: process mapping (As-Is), identification of obstacles, and solution design (to-be).

Research findings show that the current spare part procurement process still relies on multi-level manual approvals, systems that are not fully integrated, and informal communication with suppliers. The main obstacles include long internal approval lead times, data inconsistencies between systems, and the absence of an automated prioritization mechanism. The role of digital technology and supplier agreements is considered crucial in accelerating the flow of information and ensuring the availability of spare parts. Recommendations for improvement include: (1) automation of routine purchase request approvals with a 14-day deadline, (2) real-time integration between systems via API, (3) implementation of a centralized dashboard with visual urgency indicators, (4) long-term agreements with suppliers for critical spare parts, and (5) simplification of routine procurement flows. Based on interviews and FGDs, this implementation is predicted to be able to reduce lead times by 50% and increase the accuracy of decision making.

This research contributes to the combined approach of BPI, web-based system integration, and supplier collaboration, which has not been widely discussed in the literature. Practically, these recommendations can be applied by PT TACI and similar manufacturing companies to enhance supply chain efficiency. Suggestions for future research include exploring the application of AI in inventory management and conducting comparative studies in other industrial sectors.

Keywords: *Efficiency, lead time, Business Process Improvement, spare parts, integrated systems, supplier agreements*