OPTIMIZATION OF THE COLLECTING BUSINESS PROCESS FOR EXPRESS DELIVERY SERVICES USING THE BUSINESS PROCESS IMPROVEMENT (BPI) METHOD AT GERAI BERSAMA ASPERINDO MULTIEKSPRES

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Abstract
In the postal sector, business process efficiency significantly affects customer satisfaction and company performance. Based on observations, several issues were identified in the collecting business process, such as data entry errors, ineffective and inefficient delivery handover processes, and the lack of integration in sales reconciliation, among others. These issues indicate that the collecting business process is not yet optimized. This study aims to optimize the collecting business process at Gerai Bersama Asperindo Multiekspres using the Business Process Improvement (BPI) method. The research method employed is a case study with a qualitative approach. Data collection techniques include document review, interviews, and observations. The data were analyzed using Business Process Management (BPM), outlined through the three phases of Business Process Improvement (BPI): organizing for improvement, understanding the process, and streamlining. In the organizing for improvement phase, Gerai Multiekspres focuses on service efficiency, error reduction, and customer satisfaction through task division, technology utilization, and continuous training. In the understanding the process phase, the collecting process at Gerai Multiekspres involves receiving goods, handover of shipments, and daily sales reconciliation and deposits, comprising a total of 22 activities. The main challenges include the prolonged transaction process, data entry errors, ineffective and inefficient delivery handovers, and manual reconciliation, which slow down operations. Streamlining simplifies the workflow by reducing non-value-adding activities and implementing automation to accelerate operational processes. The results of the study show that the implementation of BPI reduced the process time from 106 minutes to 67 minutes, reduced the number of activities from 22 to 10, and increased throughput efficiency from 71% to 76%.
Keywords: Optimization; Collecting Business Process; Express Delivery Services; Post; Business Process Improvement (BPI)

INTRODUCTION

The postal sector plays a significant role in Indonesia's economy. This sector has contributed approximately 5% to the national Gross Domestic Product (GDP) and still holds substantial growth potential. The Covid-19 pandemic, which began to affect Indonesia in March 2020, has driven a 33.62% growth in the postal and courier sector, increasing from 24,051.40 billion rupiah in Q2 2020 to 33,012.30 billion rupiah in Q2 2021. In terms of revenue, postal service providers also experienced a 30% increase, rising from 10.6 trillion rupiah in the first half of 2018 to 13.8 trillion rupiah in the first half of 2019 (Wasesa, M., et al., 2022). This sector also supports various other fields such as healthcare, households, the military, and others, by providing different types of deliveries, both domestic (inter-city, provincial, and national) and international.

In any business, there is inevitably a series of activities referred to as business processes. In the postal service business process, there are three stages of delivery. First, first-mile delivery; second, mid-mile delivery; and third, last-mile delivery. Operationally, the postal business process, as referred to in the National Competency Standards for the Postal Sector (SKKNI), is identified to consist of functions such as collecting, processing, transporting, and delivering, often abbreviated as C-P-T-D.
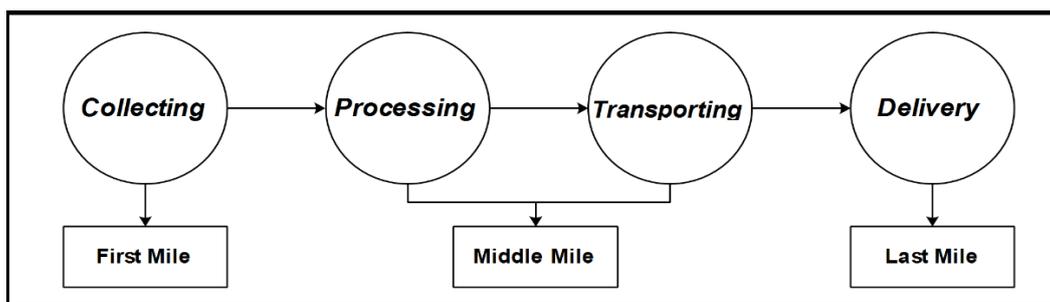
Figure 1. Postal Business Process (C-P-T-D)

In relation to the first-mile business process, the activities conducted in this stage are part of the collecting process. "According to the Annex of SKKNI No. 354 of 2014, Section A. Background, Point 5 regarding the Establishment of SKKNI for the Transportation and Warehousing Category, Core Group of Postal and Courier Services in the Postal Expertise Sub-field of Handling Written/Electronic Communication and Packages, collecting refers to the postal service activity of handling shipments conducted through various service points, such as counters operated by postal industry players, postal industry agents, and others." In other words, collecting is the activity of gathering shipments from the initial service points through various service points.

ASPERINDO (Association of Express, Postal, and Logistics Service Companies), as the association that represents the express delivery, postal, and logistics services industry, has also implemented a joint marketing strategy among its members at the initial service point (collecting or first mile), by inaugurating a joint express delivery service kiosk named *Gerai Bersama Asperindo Multiekspres*, branded as *Gerai Multiekspres*. *Gerai Multiekspres* is a service point or sales agent for delivery services located in a single place, consisting of several operators from delivery service companies, including JNE, Dakota Cargo, UPS, Pandu Logistik, and PCP Express.

This innovative step allows customers to choose operators according to their preferences. However, despite its innovation, the business process at *Gerai Multiekspres* still faces significant operational challenges. Based on a preliminary study conducted at *Gerai Multiekspres*, several issues have been identified in the process, including: errors in inputting sender and receiver data, mistakes in entering the quantity and weight of items, incorrect input of region codes, errors in labeling the items, ineffective and inefficient handover processes, and the lack of integration in sales recap processes.

Table 1. Multiekspres Service Point Shipment Growth Report

NO	PERUSAHAAN	REKAPITULASI PERTUMBUHAN KIRIMAN PERIODE 2019-2023					GRAND TOTAL	RATA-RATA JUMLAH PERTUMBUHAN
		2019	2020	2021	2022	2023		
1	GERAI MULTIEKSPRES	54%	-4%	17%	-6%	-6%	55%	11%

LAPORAN PERTUMBUHAN KIRIMAN GERAI MULTIEKSPRES

Periode : 2019-2023
Satuan Kerja : Gerai Multiekspres
Perihal : Laporan Pertumbuhan Kiriman

Based on the shipment growth report data for the period 2019-2023, it can be seen that there was positive growth in 2019, amounting to 54%, followed by a decline of -4% in 2020, and a 17% increase in 2021. Afterward, there was a consecutive decline of -6% in both 2022 and 2023. The description of the problem symptoms, supported by the data showing a decline in growth over the last two years, indicates the main issue in this study: the suboptimal collecting business process at *Gerai Multiekspres*.

In this context, analysis and evaluation of the problems within the business process that consume excessive time and costs without adding value to the customer are required. Such activities will be improved using the Business Process Improvement (BPI) method to ensure that the business process runs correctly and efficiently. The application of Business Process Improvement (BPI) is expected to resolve emerging issues and optimize the collecting business process. Previous studies have widely used the Business Process Improvement (BPI) method to enhance business process efficiency. For example, Fitriana et al. (2021) implemented a lean management approach to reduce waste, while Hidayat et al. (2024) utilized streamlining tools to shorten the delivery cycle time. However, their focus was more on the downstream process (last-mile delivery) or internal organizational optimization, without addressing the specific challenges in the early stage of the postal business process (collecting), particularly involving multi-operator services such as *Gerai Multiekspres*.

This study aims to address this gap by adopting a BPI approach specifically designed to optimize the collecting business process at *Gerai Multiekspres*. This approach integrates in-depth analysis at the initial stage of the business process (as-is), identification of key obstacles, and a redesign of the business process (to-be) using the BPI framework. Business Process Improvement (BPI) is a necessary method for implementing continuous improvement, defined as a systematic framework built to help organizations make significant progress in executing their business processes. BPI provides a system that aids in streamlining business processes, ensuring that both internal and external customers of the organization receive better outputs than before, as stated by Harrington (Arrahma, et al., 2020). BPI is related to the Business Process Management (BPM) Lifecycle, which includes process redesign as a concept. This phase is referred to as the functional improvement phase, which helps improve business processes within an organization. BPI aims to provide a competitive advantage by enhancing business processes within the organization, eliminating errors, achieving more effective business goals, and meeting customer demands, according to Chelsie (Fitriana, et al., 2021).

The key concept in this research is the optimization of the collecting business process in express delivery services through the Business Process Improvement (BPI) method at *Gerai Multiekspres*, carried out through the Business Process Management (BPM) lifecycle phases as described by Paschek, et al. (2018). This process is then elaborated in three phases of Business

Process Improvement (BPI) by Harrington (1991), namely the organizing for improvement phase, understanding the process phase, and streamlining phase.
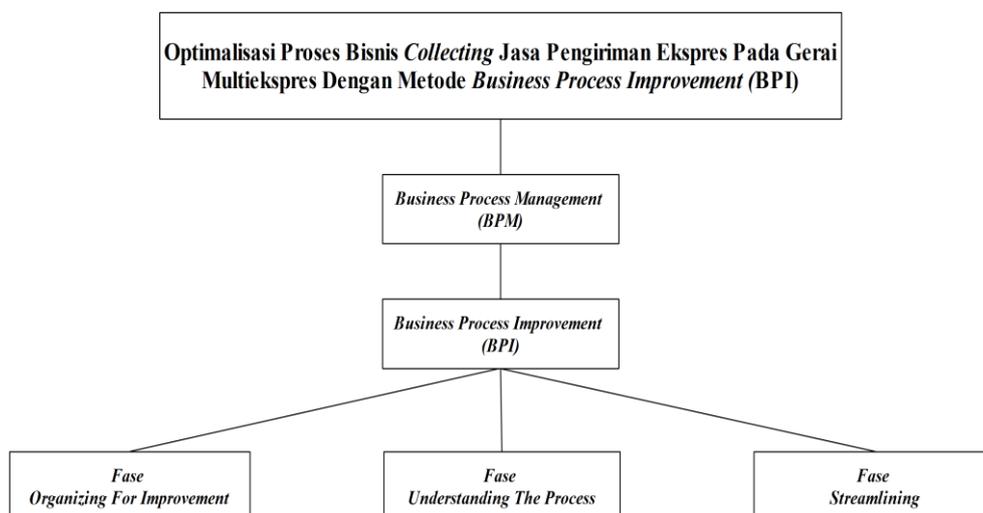

Figure 2. Research Framework

METHOD

This study uses a qualitative approach with a case study method at *Gerai Multiekspres*. The research location is at Ruko Grand Bintaro Block A No. 5, Jl. Bintaro Permai Raya, Kel. Bintaro, Kec. Pesanggrahan, South Jakarta 12330. Data collection is carried out through document review, interviews, and observations. The document review includes data on revenue growth, employee data, the *Gerai Multiekspres* profile, organizational structure, and other relevant data for this research. Interviews are conducted with key informants who have a comprehensive understanding of the collecting business process, including: the Asperindo Cooperative Management as the person responsible for the *Gerai Multiekspres* business unit, the *Gerai Multiekspres* Manager, the Sales Counter Officer, the Pickup Officer, and the customers. Observations are conducted by directly participating in the collecting business process at *Gerai Multiekspres*.

Data processing is done by documenting the results of document reviews and transcribing interview results, followed by summarizing them based on aspects of Business Process Improvement (BPI) at *Gerai Multiekspres*. Data analysis techniques use qualitative descriptive analysis, aiming to process summarized data from document reviews and interview transcripts into information that is easier to understand and interpret. This analysis process follows the model of Miles and Huberman in (Abdussamad, 2021), where data analysis consists of three main stages: data reduction, data presentation, and conclusion drawing and verification. In the data reduction stage, the data collected from the field is simplified, selected, and focused, so that only information relevant to the research is retained, while irrelevant data is discarded.

In the context of the collecting business process at *Gerai Multiekspres*, data reduction helps the researcher identify important themes, patterns, and trends, as well as focus on the main issues that need improvement. The next stage, data presentation, organizes the selected data in a way that is

structured and easy to understand, such as tables, graphs, diagrams, or narratives. Finally, conclusion drawing and verification are conducted to conclude the initial findings based on the reduced and presented data. This conclusion begins with a deep understanding of the data and patterns found, and then is verified through data rechecking, comparison with theories, or triangulation.
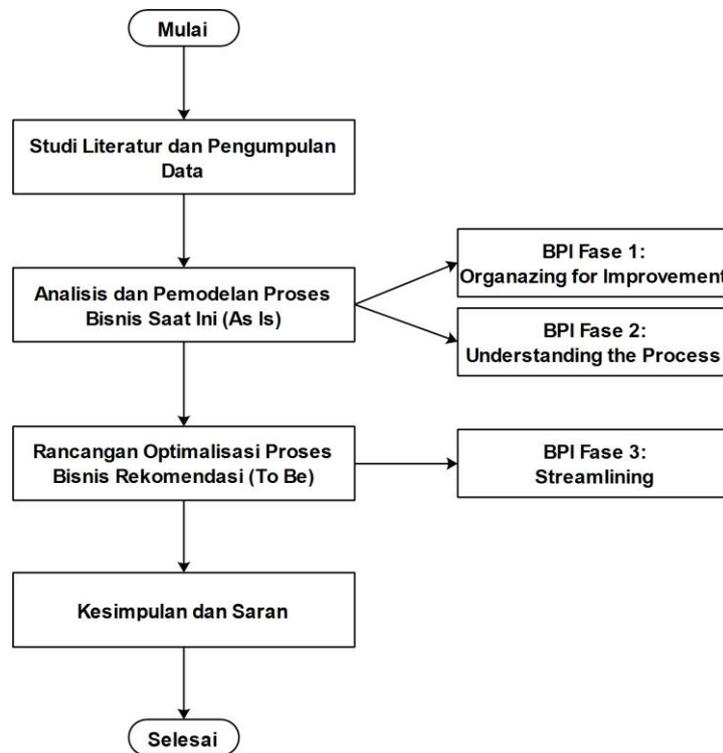
Figure 3. Research Methodology Flow Diagram

Based on Figure 3, the research analysis is conducted based on the phases of Business Process Improvement (BPI), starting with the organizing for improvement phase, which focuses on (1) the goals to be achieved, (2) an overview of the approach to be implemented, and (3) its development with employees. The understanding the process phase focuses on (1) determining the scope, (2) creating a business process flowchart, and (3) identifying problems from the current system to find gaps and inefficiencies. Next, in the streamlining phase, the focus is on (1) identifying problems, (2) making improvements to these issues, (3) implementing automation where possible, and (4) adapting the business process.

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RESULTS AND DISCUSSION

1. Organizing for Improvement (BPI Phase 1)

The following is the research result from the organizing for improvement phase, which includes organizational goals, organizational approach, and employee development:

a. Organizational Goals

Gerai Multiekspres aims to enhance service efficiency, reduce operational errors, and improve customer satisfaction. Their vision is to become a pioneer in technology-based delivery

collaboration, with a mission to provide excellent and solution-oriented services for stakeholders. Gerai Multiekspres emphasizes the importance of focusing on speed and accuracy in service delivery. In line with Harrington's theory (1991), having clear goals is crucial to provide direction and a foundation for continuous improvement, enabling optimal resource allocation within the company.

b. Organizational Approach

The approach implemented by Gerai Multiekspres involves clear task delegation to employees based on their job descriptions. Gerai Multiekspres operates with multiple delivery service providers, allowing customers to choose the service that best suits their needs. Furthermore, the strategy employed by Gerai Multiekspres focuses on process improvement through workflow adjustments and the use of technology to accelerate processes and reduce human errors. This approach reflects the importance of management's role in enhancing the overall organizational performance. The innovations applied aim to create greater efficiency by introducing new systems to expedite business processes.

c. Employee Development

Employee involvement in the improvement process is one of the key factors for successful change at Gerai Multiekspres. The company emphasizes the importance of providing ongoing training and evaluations to ensure employees understand their tasks and roles. This training covers work processes and the use of new systems designed to enhance work efficiency. In addition, regular evaluations are conducted to monitor progress and provide constructive feedback. Gerai Multiekspres highlights that employee engagement in every stage of improvement allows them to take greater responsibility for the outcomes of the processes.

Organizing for Improvement at Gerai Multiekspres follows an approach consistent with the principles outlined by Harrington (1991), where effective organizations, continuous improvement, and employee engagement are key elements in achieving efficiency and customer satisfaction. The application of technology, clear task delegation, and continuous training ensure that process improvements are optimized and relevant to the dynamic business needs.

2. Understanding the Process Phase (BPI Phase 2)

The following is the research result from the understanding the process phase, which includes the determination of the scope, business process flowchart, and identification of issues within the current system:

a. Determining the Scope

The scope of the business process discussed involves the collecting process at Gerai Multiekspres. This process includes the collection of goods from the sender to the delivery of the goods to the pickup courier and the creation of sales reports and daily deposits. The collecting process is a crucial starting point for the delivery service as it directly impacts the

company's revenue. In this scope, the actors involved include customers, sales counter officers (SCO), and pickup couriers, with a focus on three main activities: goods receipt, handover of shipments, and the recap of sales and daily deposits.

b. Business Process Flowchart

The collecting business process is illustrated through a flowchart that visualizes the sequence from goods receipt to the recap of sales and daily deposits. The flowchart is visualized using Business Process Modeling Notation (BPMN), flow process diagrams, and the American Society of Mechanical Engineers (ASME) process maps.

Table 2

Business Process Modeling of Collecting As Is (Current) with Business Process Modeling Notation (BPMN)

Figure 4. Flow Process Diagram of the Collecting Activities As Is (Current)

Table 3

American Society of Mechanical Engineers (ASME) Process Map of the Collecting Business

Process As Is (Current)

PETA PROSES STANDAR ASME PROSES BISNIS COLLECTING

RINGKASAN		PROSES BISNIS COLLECTING AS IS			
KEGIATAN	LAMBANG	Jumlah	Durasi (Menit)	Pekerjaan : Proses Bisnis Collecting	
Operasi	○	20	75	Nomor Peta : 01/ASME/PBC/IX/2024	
Transportasi	⇨	2	31	Proses Bisnis ▦	
Menunggu	D	-	-		
Pemeriksaan	□	-	-	Sekarang ▦ Usulan □	
Operasi dan Pemeriksaan	◎	-	-		
Penyimpanan	▽	-	-	Dipetakan Oleh : Denies Susanto	
Total		22	106	Tanggal Pemetaan : 1 September 2024	

No.	Uraian Kegiatan	○	⇨	D	□	◎	▽	Aktor	Durasi (Menit)
1	Pelanggan datang membawa barang kiriman		●					Pelanggan	1
2	Petugas sales counter officer melakukan greeting pelanggan (senyum, salam, sapa)	●						Petugas SCO	1
3	Pelanggan menyerahkan barang yang akan di kirim	●						Pelanggan	1
4	Petugas sales counter officer menanyakan pilihan perusahaan ekspedisi/jasa pengiriman	●						Petugas SCO	2
5	Petugas sales counter officer menentukan berat (menimbang/mengukur) barang kiriman	●						Petugas SCO	5
6	Petugas sales counter officer melakukan entry data pembuatan connote/resi pengiriman	●						Petugas SCO	10
7	Petugas sales counter officer menempelkan identitas barcode atau label pada barang kiriman	●						Petugas SCO	1
8	Petugas sales counter officer memberikan connote/resi kepada pelanggan	●						Petugas SCO	1
9	Pelanggan membayar ongkos/biaya kirim	●						Pelanggan	2
10	Petugas pickup melakukan login ke sistem dan pilih menu handover	●						Petugas SCO	1
11	Petugas pickup melakukan input nama (id) kurir yang melakukan pickup barang di Gerai Multiekspres	●						Petugas Pickup	1
12	Petugas pickup melakukan Scan/Input Barang yang akan di Handover	●						Petugas Pickup	20
13	Petugas pickup melakukan verifikasi barang yang akan di handover (fisik dengan data)	●						Petugas Pickup	5
14	Petugas sales counter officer mengaprove dan memastikan jumlah barang yang di handover dan fisik telah sesuai	●						Petugas SCO	2
15	Petugas sales counter officer mencetak dokumen (2 rangkap)handover/serah terima barang	●						Petugas SCO	5
16	Petugas sales counter officer menandatangani dokumen handover	●						Petugas SCO	1
17	Petugas pickup menandatangani dokumen handover	●						Petugas Pickup	1
18	Petugas pickup akan mengirimkan barang tersebut ke smart point (gudang outbound)		●					Petugas Pickup	30
19	Petugas sales counter officer melakukan rekap penjualan harian gerai multiekspres	●						Petugas SCO	5
20	Petugas sales counter officer memilih menu packing list lakukan aprove dan closing penjualan harian	●						Petugas SCO	2
21	Petugas sales counter officer mencetak dokumen packing list	●						Petugas SCO	4
22	Petugas sales counter officer melakukan penyetoran pembayaran kiriman berdasarkan packing list	●						Petugas SCO	5

Shortly, the business process activities include:

- The customer arrives with the shipment.

- The sales counter officer (SCO) performs data entry, weighs the goods, and attaches a barcode label.

- The pickup officer performs the handover of goods and delivers the goods to the smart point.

- The process concludes with the daily sales recap and deposit.

This flow includes several manual activities that are time-consuming and have the potential to cause errors.

c. Identifying Issues in the Current System

Through interviews and observations, several key issues in the collecting business process were identified, including:

- Long transaction time: Long queues occur due to the data entry process, which takes up to 10 minutes per customer.

- Data entry errors: There is a high potential for human error, leading to shipment mistakes such as misrouting or even loss of goods.
- Suboptimal goods handover: The handover process is slow, and there is no barcode-sealed bag system, increasing the risk of lost items.
- Non-integrated sales recap: The recap process is still done manually, resulting in long recap times and the risk of data errors.

From the evaluation, several gaps were found between the current system and the expected efficiency. The manual data entry process and the lack of system integration lead to work accumulation and long wait times. With an efficiency throughput rate of only 71%, system improvements are needed to minimize non-value-added activities (NVA) and optimize activities that support productivity.

3. Streamlining Phase (BPI Phase 3)

The following is the research result from the streamlining phase, which includes issue identification, improvements, automation, and adaptation of the business process:

a. Identifying Problems

The collecting process at Gerai Multiekspres faces several key issues, including:

- Long transaction times for receiving shipments.
- Frequent data entry errors (human errors).
- Suboptimal handover process to the pickup courier, such as items being collected in one bag without proper sorting.
- Sales recap still done manually and not integrated.

b. Making Improvements

The improvement design is focused on streamlining the process and reducing time spent in various stages. Some improvement steps include:

- Creating a customer self-service platform, so customers can input shipment data independently, reducing errors and the time required by the staff.
- Optimizing the handover process by sorting items based on service and destination before handing them over to the courier, thus speeding up the handover.
- Integrating the sales recap system, so staff no longer need to manually perform the recap.

c. Implementing Possible Automation

Several processes are proposed for automation:

- A self-service platform for customers to input data independently, reducing the workload on staff and minimizing human errors.
- A mobile application for handover bags that enables the sales counter officer (SCO) to process items according to service and destination more efficiently, and the courier only needs to scan the barcode on the bag to continue the process.

- Integration of the sales system, which automatically performs the recap and simplifies the reporting and daily deposit processes.

d. Adapting the Business Process

Next, the adaptation of the business process is visualized through a business process model recommendation (to-be).

Table 4

Business Process Modeling of Collecting To Be (Recommended) with Business Process Modeling Notation (BPMN)
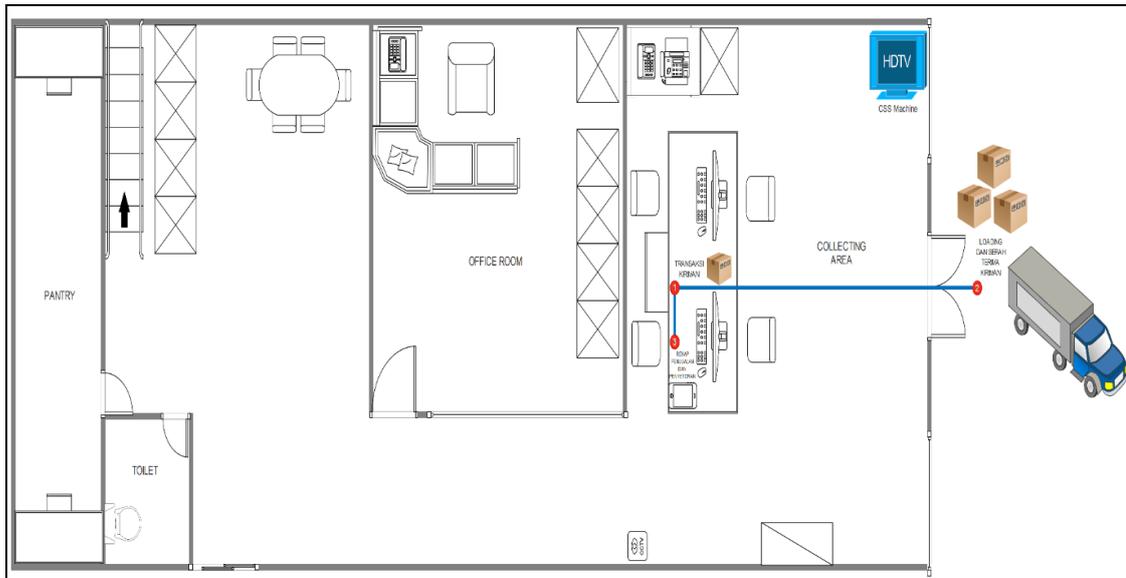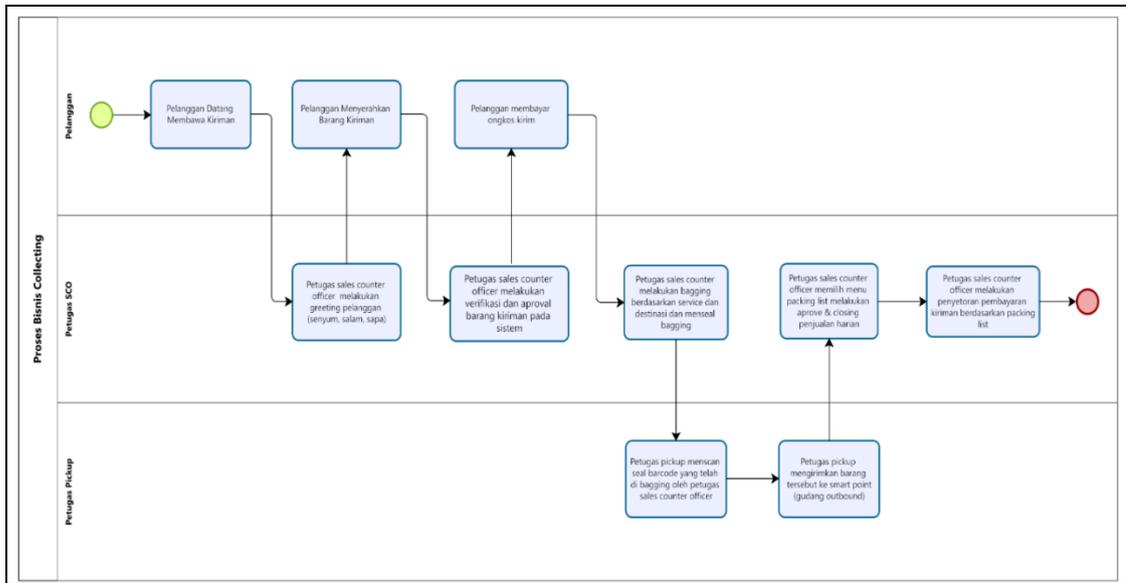

Figure 5. Flow Process Diagram of the Collecting Activities to Be (Recommended)

Table 5

American Society of Mechanical Engineers (ASME) Process Map of the Collecting Business

Process to Be (Recommended)

PETA PROSES STANDAR ASME PROSES BISNIS COLLECTING										
RINGKASAN				Pekerjaan : Proses Bisnis Collecting						
KEGIATAN	LAMBANG	PROSES BISNIS COLLECTING TO BE								
		Jumlah	Durasi (Menit)	Nomor Peta : 01/ASME/PBC/X/2024						
Operasi	○	8	51	Proses Bisnis						
Transportasi	⇨	2	16							
Menunggu	D	.	.	Sekarang				Usulan		
Pemeriksaan	☐	.	.							
Operasi dan Pemeriksaan	⬭	.	.							
Penyimmpanan	▽	.	.	Dipetakan Oleh : Denies Susanto						
Total		10	67	Tanggal Pemetaan : 1 Oktober 2024						

No.	Uraian Kegiatan	Lambang						Aktor	Durasi (Menit)
		○	⇨	D	☐	⬭	▽		
1	Pelanggan Datang Membawa Barang Kiriman		●					Pelanggan	1
2	Sales Counter Officer melakukan Greeting Pelanggan (Senyum, Salam, Sapa)	●						Petugas SCO	1
3	Pelanggan menyerahkan barang yang akan di kirim	●						Pelanggan	1
4	Petugas Sales Counter Officer melakukan verifikasi dan aproval pada sistem terkait barang yang akan dikirim oleh pelanggan	●						Petugas SCO	5
5	Pelanggan Membayar Biaya/Ongkos Kirim	●						Pelanggan	2
6	Petugas Sales Counter Officer melakukan bagging barang melalui aplikasi handover bag milik petugas SCO berdasarkan service dan destinasi kiriman dan menseal setiap bagging tersebut	●						Petugas SCO	30
7	Petugas pickup menscan seal barcode yang telah di bagging oleh petugas SCO	●						Petugas Pickup	5
8	Petugas Pickup akan mengirimkan barang tersebut ke Smart Point (Gudang Outbound)		●					Petugas Pickup	15
9	Sales Counter Officer Memilih Menu Packing List Lakukan Aprove dan Closing Penjualan Harian	●						Petugas SCO	2
10	Sales Counter Officer Melakukan Penyetoran Pembayaran Kiriman Berdasarkan Packing List	●						Petugas SCO	5

The recommended business process includes the use of a self-service platform, a mobile application for handovers, and the integration of the sales system. This process will reduce the number of activities from 22 to 10 and decrease the process time from 106 minutes to 67 minutes, improving the throughput efficiency from 71% to 76%. This adaptation makes the business process faster, more effective, and flexible in handling a larger number of customers with a lower potential for errors. With these improvements, Gerai Multiekspres can significantly enhance productivity and customer satisfaction.

CONCLUSION

Based on the results of the analysis conducted by the researcher, the following general conclusion can be drawn: the collecting business process at Gerai Multiekspres is not yet optimal, with several activities still needing to be optimized through the Business Process Improvement (BPI) method. The conclusions for each phase are as follows:

1. Organizing for Improvement Phase

In BPI Phase 1, organizing for improvement, Gerai Multiekspres focused on improving service efficiency, reducing operational errors, and enhancing customer satisfaction, with a vision to become a pioneer in technology-based delivery services. The approach involved clear task delegation, the use of technology to accelerate processes, and the reduction of manual errors.

Continuous training and evaluation became key components to ensure employees understood their roles and adapted to new systems, fostering shared responsibility for improvements. This aligns with Harrington's (1991) principles, which emphasize the importance of structured and continuous management in achieving optimal efficiency.

2. Understanding the Process Phase

In BPI Phase 2, understanding the process, the collecting business process at Gerai Multiekspres involved goods receipt, handover to the courier, and sales recap. The main issues identified were long transaction times due to manual data entry, data entry errors that risked misrouting, and suboptimal goods handover. The manual sales recap also slowed down operations. Analysis revealed 22 activities, of which only 5 directly added value (Real Value Added/RVA), with a throughput efficiency of 71%. To address these inefficiencies, the proposed solutions include technology integration, such as automated data entry, streamlined handover processes, and integrated sales recap. These steps are expected to improve the speed and accuracy of the overall process.

3. Streamlining Phase

In BPI Phase 3, streamlining, the main issues in the collecting process at Gerai Multiekspres, such as long transaction times, data entry errors, and suboptimal handover processes, were addressed through simplification and automation. Automation was implemented through a customer self-service platform that allows customers to input data independently, and the use of a mobile handover bag application to speed up the goods handover process. The sales recap system was also integrated, eliminating the need for manual recaps. This adaptation reduced the process time from 106 minutes to 67 minutes, reduced activities from 22 to 10, and increased throughput efficiency from 71% to 76%. These improvements significantly enhanced productivity and customer satisfaction.

Overall, the research results show an increase in efficiency in the business process at Gerai Multiekspres, with measurable optimization recommendations: a 39-minute reduction in process time, a reduction of 12 activities, and a 5% increase in throughput, which directly impacts the store's operations.

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