

USULAN PERBAIKAN PROSES BISNIS PEMESANAN BAHAN BAKAR MENGUNAKAN APLIKASI MS2 DENGAN MENGGUNAKAN METODE BUSINESS PROCESS IMPROVEMENT (STUDI KASUS: Terminal BBM Pulau Baai, Bengkulu)

PROPOSED IMPROVEMENTS TO THE FUEL ORDERING BUSINESS PROCESS USING THE MS2 APPLICATION WITH IMPROVEMENT BUSINESS PROCESS METHOD (CASE STUDY: Baai Island's Fuel Oil Terminal, Bengkulu)

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Abstract

The Baai Island BBM Terminal focuses on distributing fuel to the Bengkulu Province gas stations and distributing fuel for aircraft fuel needs at the airport. Therefore they have one most important division to process all fuel distribution, namely the *SSGA (Sales Service and General Affair) division*. This division is responsible for preparing and handling inappropriate BBM/NBBM orders from customers, monitoring the system to see customers ordering BBM, and evaluating BBM/NBBM sales reports. However, there is a problem when a customer wants to order BBM, namely some SMS customers who live in the district often do not enter the MS2 application. So, it is necessary to improve business processes with the aim of minimizing the number of sms that does not enter the MS2 application and reducing processing time.

With these obstacles, the researchers provided the background for making suggestions for improving business processes with the Business Process Improvement methodology, considering that this business process is an important business process for *FT TBBM Pulau Baai* by identifying GAP and identifying types of activities based on BPI.

The final result of this study is a proposed business process for ordering BBM through the MS2 application by applying *value added, simplification, automation, eliminating bureaucracy, reduce cycle time, eliminating duplication* which results in a reduced number of activities in business processes and involves several improvements to new process components, namely the addition of resources, human resources, and infrastructure enhancement.

Keywords: [*business process improvement, business process, value added, simplification, automation, eliminating bureaucracy, reduce cycle time, eliminate duplication*]

I. Introduction

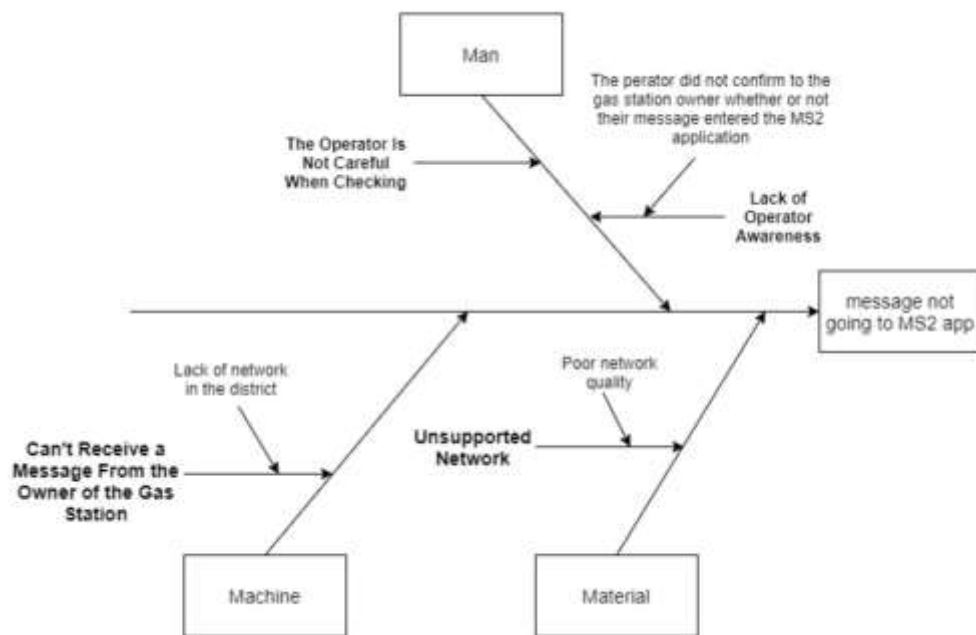
In the current era of globalization, economic growth is increasing rapidly. It is very important for every company to further improve their quality and quantity sales. Like PT. Pertamina (Persero), it is time for Pertamina to take steps to respond optimistically to the challenges that lie ahead in order to create sustainable business growth for the company through investment and business optimization so that it continues to grow in accordance with the expectations of all stakeholders. Domestically, Pertamina serves fuel needs at 63 airports through Aircraft Filling Depots (DPPU) which are spread in the Marketing Operation Region (MOR) 1 to MOR 8, while Baai Island's FT BBM Terminal, Bengkulu is included in the MOR 2 section of South Sumatra. Baai Island Fuel Oil Terminal has been operating since 1984. The equipment and facilities at the Fuel Oil Terminal have undergone several repairs and developments, especially the addition of operational support facilities. Routine

maintenance of existing equipment and facilities, such as cleaning and painting of tanks and pipes, is carried out periodically to protect equipment and facilities from damage due to corrosion or rust. The operational activities of the Baai Island Fuel Oil Terminal will continue as long as it is feasible to be operated by PT Pertamina (Persero) in terms of the economy and policies of the Bengkulu City Government.

The location of the Baai Island Fuel Oil Terminal is administratively located in Sumber Jaya Village, Kampung Melayu District, Bengkulu City, Bengkulu Province. Baai Island Fuel Oil Terminal has a land area of 105,185 m² (42,000 m² land, pipe land 31,665 m², waters 31,502 m²) with leased land status from PT.PELINDO II (Persero) Bengkulu Branch. Baai Island Fuel Oil Terminal focuses on distributing fuel to the Bengkulu Province gas stations and distributing fuel for aircraft fuel needs at the airport. Therefore they have one most important division to process all fuel distribution, namely the SSGA(Sales Service and General Affair) division. In this division they are responsible for preparing and handling unsuitable BBM/NBBM order from customers, monitoring the system to see customers that ordering the fuel oil, and evaluating on sales reports of BBM/NBBM. Based on the duties and responsibilities that have been explained, it indicates that the SSGA division plays an important role for Baai Island Fuel Oil Terminal (FT), Bengkulu. Because, it is the division that determines the sales volume whether it increase or decrease.

As previously explained, one of the task of the SSGA division is to monitor customer order, the following will explain the Fuel Oil ordering system. The fuel oil ordering system using SMS is one of the ways that Pertamina provide to make it easier for customers to order fuel oil. The customer must order via SMS using a number that has been determined by Pertamina on the condition that the customer must send a message at the specified time determined by Pertamina, if the customer sends a message outside the specified hours, then the message will not enter the system and Pertamina will not process the delivery of fuel to the gas station. By using the method of sending messages via SMS to order fuel, problems often occur when customers send messages, it often occurs that the message does not enter the system so that if this problem occurs, Pertamina will not distribute the fuel to gas stations because Pertamina will only distribute the fuel if the customer's message has entered the system and the customer has completed the payment. If the fuel is not distributed, then the fuel stock at the gas station will be ran out, resulting in losses that will be experienced by both customers and Pertamina.

From the results the data will go into processing which will be used as customer complaints. There are several factors that cause the messages not enter the MS2 application, so that further analysis will be carried out on the causes of the messages not sent to the MS2 application which will be mapped in the Fishbone Diagram to find out in more detail what are the factors causing the occurrence and the main factors causing the messages not to be sent to the application MS2.



Based on the problems above, the author uses the Business Process Improvement (BPI) method. By using the Business Process Improvement (BPI) method, the author can improve the business processes that operate in the SSGA division by using applications to make the business process flow more effective and efficient. As in Fany Putri Novitasari's research which discusses the Design for Improvement of the Shoe Ordering Process at PT Primarindo Asia Infrastructure with the Business Process Improvement Method.

Based on this background, it is necessary to take steps to improve business processes by evaluating and redesigning business processes for fuel ordering which still use the manual method. This research focuses on the proposed business process improvement to replace the way of fuel ordering by using an application using the Business Process Improvement (BPI) method. With the proposed process improvement, the company can apply the proposal to the SSGA division so that sales volume remains stable.

II. Literature Review

II.1 Business Process

A business process is a process that consists of a group of logically related tasks that use organizational resources to deliver specified results in support of organizational goals (Harrington, 1991). A business process is defined as a collection of activities that take one or more types of inputs and create outputs of value to customers (Hammer & Champy, 2001).

A business process is a set of activities designed to produce a certain output for a particular customer. In a business process, it must have (1) clear objectives, (2) inputs, (3) outputs, (4) use resources, (5) have a number of activities in several stages, (6) can affect more than one unit in the organization, and (7) can create value for consumers (Sparx System, 2004).

II.2 Business Process Improvement

Cycle time is the cycle time used in producing an output from the given input which this cycle time can hinder the efficiency and effectiveness of the company's business processes so that there are 3 ways to improve the cycle time that runs within the company, namely (Harrington, 1991) :

1. Elimination of Non Value added Activities (NVA). NVA is an activity from a business process that does not provide significant benefits and value to customers or in business processes so

that eliminating this activity can provide time efficiency in the organization's business processes.

2. Minimizing Business Value Added (BVA) activities. BVA are activities from a business process that do not provide added value for the results of the process directly, but these activities are needed in business processes as a support for other business processes so that this activity can help the process become more effective but this activity is not recommended to overdo it so it requires a reduction in this process.
3. Simplify Real Value Added (RVA) activities. RVA includes important processes that convert inputs into outputs needed to meet customer satisfaction so this process becomes very important but the simpler this activity the better in effectiveness and efficiency of cycle time.

In this study, researchers focused on the proposed process improvement design by applying improvement techniques using the Improvement Technique Wheel improvement technique. Here are 6 process improvement techniques (Page, 2010, p. 12)



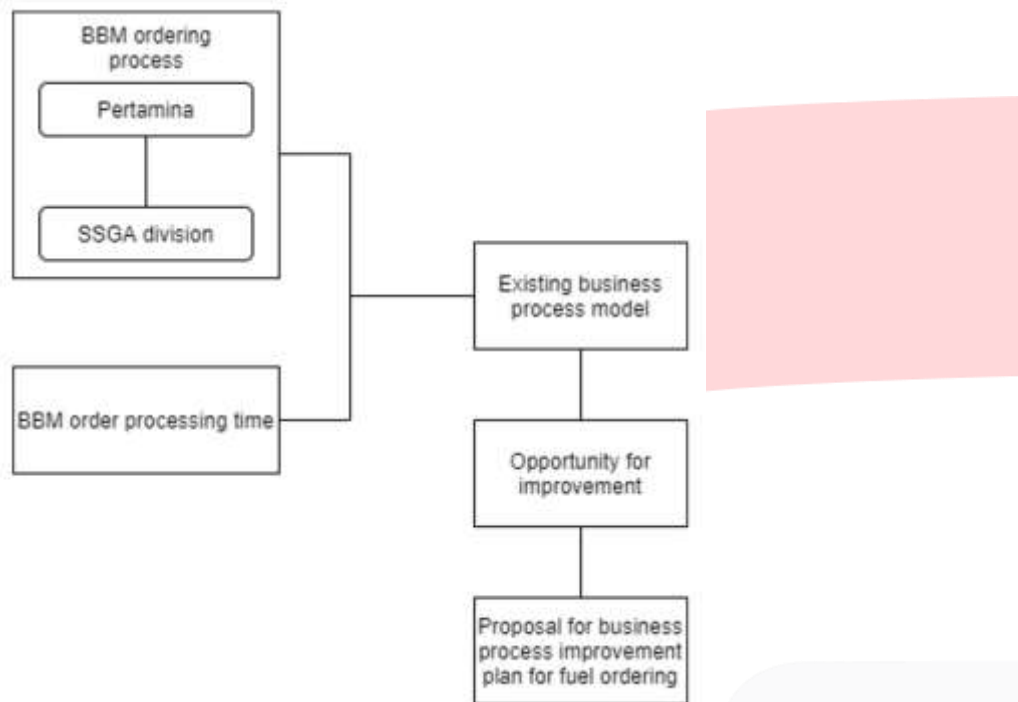
In the figure is a picture of a process improvement technique that has 6 techniques for process improvement. The following are 6 techniques used for process improvement :

1. Eliminate Bureaucracy
In a process, it is often found that there are many bureaucratic processes that prevent the process from being effective and efficient. By eliminating bureaucratic processes, it can improve a process to be effective and efficient.
2. Value Added
Identify and evaluate activities in a process to determine whether they add value or not.
3. Eliminating Duplication
Eliminate repetition in the process to make the time of the process more effective and efficient.
4. Simplification
Simplification of inefficient processes so that the process becomes more efficient.
5. Reducing Cycle Time
Reduce the cycle time contained in a process by determining certain improvements to reduce the process time of the activity.
6. Automation
Directing the activities carried out to be more simple, effective and efficient.

III. Conceptual Model

The conceptual model is a framework that describes the model and stages in conducting research, starting from the object to be studied and the variables related to the problem under study. The

following is an overview of the conceptual model in designing the proposed improvement of the fuel ordering business process.



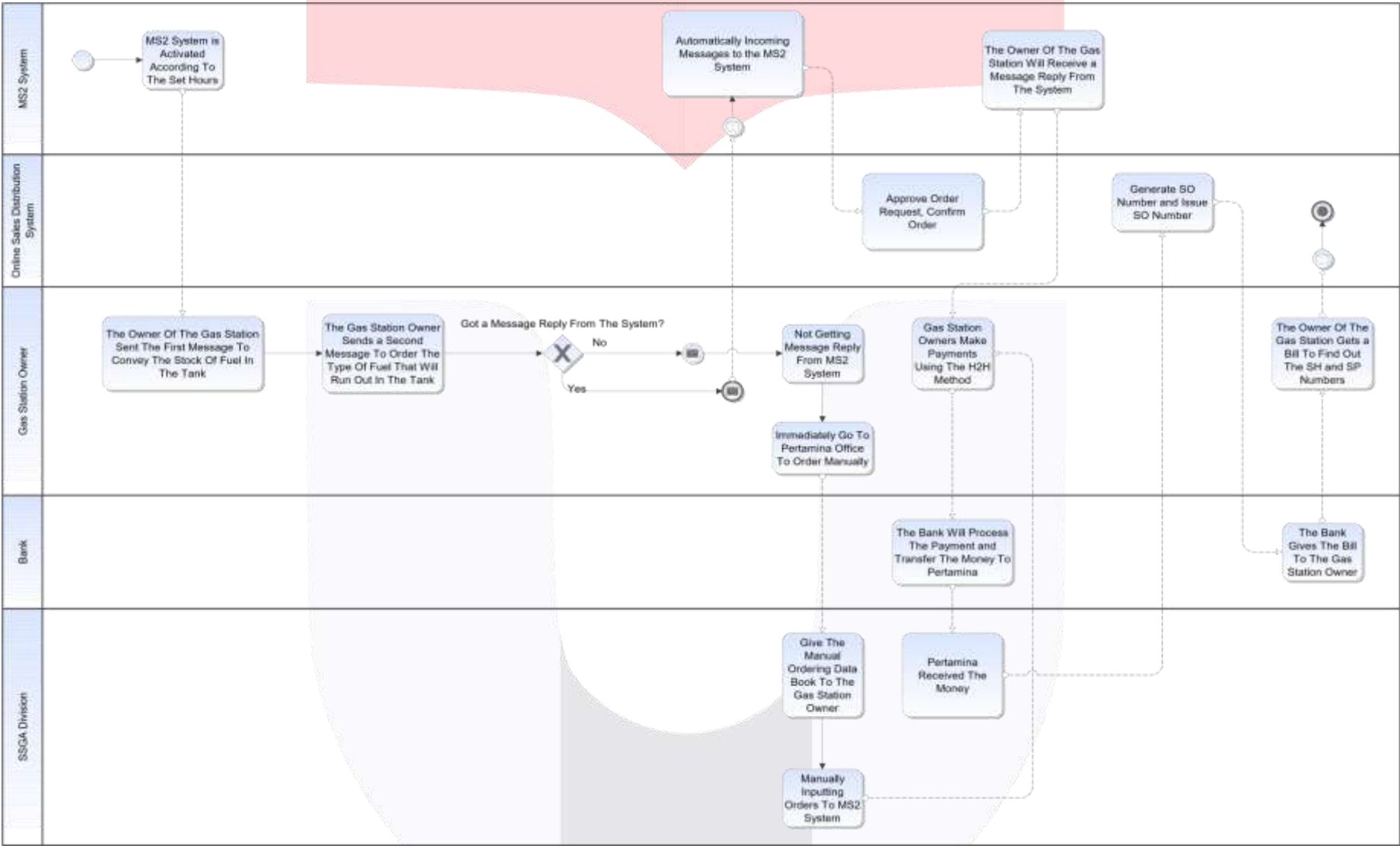
The picture above is a Conceptual Model that was designed to improve the business process of Pertamina's Baai Island FT, Bengkulu which involves one of the divisions of 4 divisions, namely the SSGA (Sales Service and General Affair) division. In the first step of this research, it is necessary to determine the input from the image above, it is the message data that does not enter the system, Existing Business Processes, and the last is the percentage of the messages that does not enter within a month. Then, the next step is to make a proposed business process design to improve business processes with the Business Process Improvement method and the last step is to produce a business process proposal design for the SSGA (Sales Service and General Affair) division. In this study, researchers used the sixth stage of the Business Process Improvement method, namely the Apply Improvement Wheel. The results of the proposed design of the Improvement wheel for the Business Process Improvement method will be used as a requirement for designing process improvements. Furthermore, designing a new business process design proposal using the Business Process Improvement method. After the proposed business process design is carried out, the verification and validation stages are carried out on the proposed results.

IV. Discussion

IV.1 Existing Process Business

Business process of BBM ordering process before improvement





IV.2 Identification of activity types based on BPI

Activities in a process need to be classified based on the value of the activity, namely Real Value Added (RVA), Business Value Added (BVA), and Non Value Added (NVA). Of the 7 activities in the BBM Ordering Business Process, the following are the results of the identification of these activities.

Number.	Activity	Activity Doer	Activity Type	Description
1.	The gas station owner sends the first and second messages to the MS2 system	Gas station owner	BVA	In this activity the gas station owner sends the first message to convey the remaining fuel stock in the stockpile, then the gas station owner sends a second message to order the type of fuel needed.
2.	The gas station owner immediately makes the payment process at the bank	Gas station owner	NVA	In this activity, the gas station owner who has received a message from the MS2 system will process the payment at the bank so that Pertamina can process the order.
3.	The Bank receives the money, and transfers the money to Pertamina	Teller Bank	RVA	In this activity, when the bank teller has received money from the gas station owner, the teller will continue the payment process by transferring the money to Pertamina.
4.	Pertamina received the money	Pertamina	BVA	In this activity, Pertamina will check whether the payment process from the bank teller has been completed or not.

5.	Pertamina opens the OSDS application to convert SO numbers into LO numbers	Pertamina	RVA	In this activity, when the payment process has been confirmed, Pertamina will open the OSDS application to convert the SO number into an LO number, where the number will be given to the gas station owner.
6.	Pertamina makes a fuel delivery schedule in the MS2 system	Pertamina	RVA	In this activity, Pertamina will schedule the delivery of fuel in the MS2 system according to the shift requested by the gas station owner.
7.	Pertamina sends fuel according to the time and schedule that has been set	Pertamina	RVA	This activity is the last process, it is the delivery of fuel according to the schedule and shifts that have been set.

IV.3 Business Process Improvement with the Apply Improvement Technique Stage

The Apply Improvement Wheel stage is a process improvement stage, evaluating the added value of an activity, eliminating repetitive activities, simplifying processes, reducing cycle time. The following is the result of the analysis of apply improvement technique

Improvement wheel for Gas Station Owner activity sends the first and second messages to the MS2 system

Improvement Technique Wheel	Improvement Analysis	Improvement Recommendation
Eliminate Bureaucracy	In this activity no bureaucracy was found, so it does not require improvement for the activity of the gas station owner sending the first and second messages to the MS2 system	No need to make improvement.
Value Added Assessment	In this activity, the gas station owner must send a message to order the desired fuel, so this activity is included as real value added.	
Eliminate Duplication	In this activity there is no repetition in the process	

	which makes time ineffective and inefficient.
Simplification	In this activity, there is no need for simplification.
Reduce Cycle Time	In this activity there is no process that can reduce time
Automation	This activity does not require improvement automation

Improvement wheel for Gas Station Owner activities to immediately process payments at the Bank

Improvement Technique Wheel	Improvement Analysis	Improvement Recommendation
Eliminate Bureaucracy	In this activity no bureaucracy was found, so it does not require improvement for the activity of the gas station owner to immediately process payments at the bank	Perform regular network checks and repairs to avoid problems during the payment process.
Value Added Assessment	In this activity, the owner of the gas station must process payments at the bank, so this activity includes real value added.	
Eliminate Duplication	In this activity there is no repetition in the process which makes time ineffective and inefficient.	
Simplification	In this activity, there is no need for simplification.	
Reduce Cycle Time	This activity is an important activity and cannot be avoided because it is to continue the fuel ordering process. However, if there is a technical or non-technical problem, the system cannot input the payment process, so the gas station owner must use another method to process the payment.	
Automation	This activity does not require improvement automation	

Improvement wheel for activities The Bank receives the money, and transfers the money to Pertamina

Improvement Technique Wheel	Improvement Analysis	Improvement Recommendation
Eliminate Bureaucracy	In this activity no bureaucracy was found, so it does not require improvement for the activities of the Bank receiving the money, and	No need to make improvement

	transferring the money to Pertamina	
Value Added Assessment	This activity provides added value directly due to payment confirmation, this activity is included in real value added.	
Eliminate Duplication	In this activity there is no repetition in the process which makes time ineffective and inefficient, so it does not require improvement.	
Simplification	In this activity, there is no need for simplification.	
Reduce Cycle Time	In this activity there is no delay which causes the process to be hampered	
Automation	This activity does not require improvement automation	

Improvement wheel for activities of Pertamina received the money

Improvement Technique Wheel	Improvement Analysis	Improvement Recommendation
Eliminate Bureaucracy	In this activity there is no bureaucracy, so it does not require improvement for activities of Pertamina receive the money.	No need to make improvement.
Value Added Assessment	This activity provides added value directly due to payment confirmation, this activity is included in real value added.	
Eliminate Duplication	In this activity there is no repetition in the process which makes time ineffective and inefficient, so it does not require improvement.	
Simplification	In this activity, there is no need for simplification.	
Reduce Cycle Time	In this activity there is no delay which causes the process to be hampered	
Automation	This activity does not require improvement automation	

Improvement wheel for activities of Pertamina opens OSDS application to convert SO number to LO number

Improvement Technique Wheel	Analisis Improvement	Rekomendasi Perbaikan
Eliminate Bureaucracy	In this activity, no bureaucracy was found, so there was no need for	No need to make improvement.

	improvement for Pertamina's activities to open the OSDS application to convert SO numbers to LO numbers.	
Value Added Assessment	This activity provides added value and cannot be eliminated, because it is related to the fuel ordering process. This activity needs to be done to issue the SO number and LO number and give it to the gas station owner.	
Eliminate Duplication	In this activity there is no repetition in the process which makes time ineffective and inefficient, so it does not require improvement.	
Simplification	In this activity, there is no need for simplification.	
Reduce Cycle Time	In this activity there is no delay which causes the process to be hampered	
Automation	This activity does not require improvement automation	

Improvement wheel for Pertamina's activities to schedule fuel delivery in the MS2 system

Improvement Technique Wheel	Improvement Analysis	Improvement Recommendation
Eliminate Bureaucracy	In this activity no bureaucracy was found, so it does not require improvement for Pertamina's activities to schedule fuel delivery in the MS2 system.	No need to make improvement.
Value Added Assessment	This activity provides added value and cannot be eliminated, because it is related to the fuel ordering process. This activity needs to be done to make a fuel delivery schedule based on the shift requested by the gas station owner.	
Eliminate Duplication	In this activity there is no repetition in the process which makes time ineffective and inefficient, so it does not require improvement.	

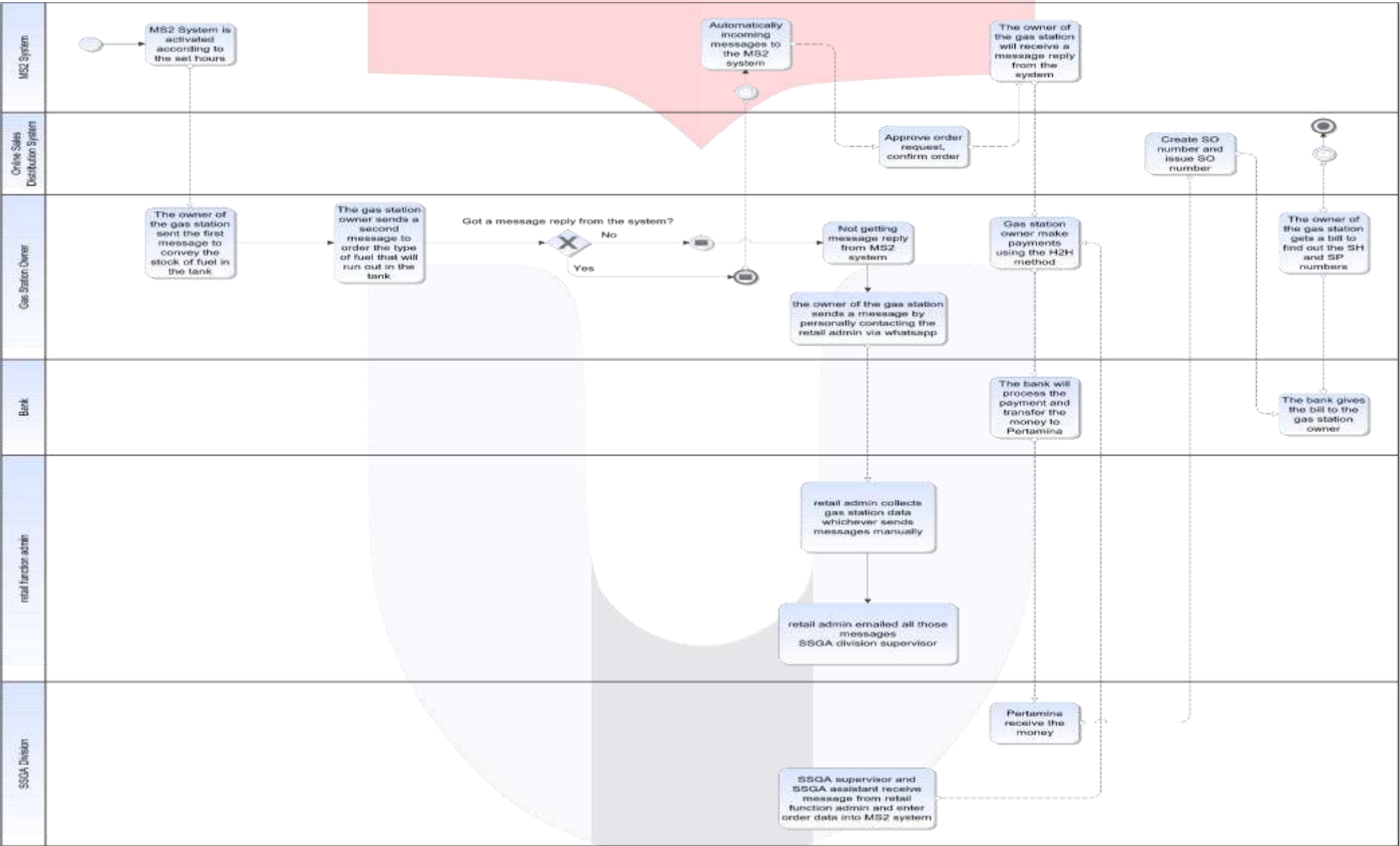
Simplification	In this activity, there is no need for simplification.
Reduce Cycle Time	In this activity there is no delay which causes the process to be hampered
Automation	This activity does not require improvement automation

Improvement wheel for Pertamina's activities to send fuel according to the hours and schedules that have been set

Improvement Technique Wheel	Improvement Analysis	Improvement Recommendation
Eliminate Bureaucracy	In this activity, no bureaucracy was found, so it does not require improvement for Pertamina's activities to send fuel according to the hours and schedules that have been set.	To minimize the occurrence of delays in fuel delivery, Pertamina has prepared whichever route is the fastest to get to the gas station that ordered it.
Value Added Assessment	This activity provides added value and cannot be eliminated, because it is related to the fuel ordering process. This activity needs to be done as the last process of fuel ordering.	
Eliminate Duplication	In this activity there is no repetition in the process which makes time ineffective and inefficient, so it does not require improvement.	
Simplification	In this activity, Pertamina must determine which route will be passed by the fuel tanker truck driver. This is to minimize the occurrence of delays during the fuel delivery process.	
Reduce Cycle Time	In this activity there is no delay which causes the process to be hampered	
Automation	This activity does not require improvement automation	

IV.3 Proposed Improvement of Fuel Ordering Business Process

At this stage, the researcher designed a proposal for business process improvement and there were several changes in activity, such as when the gas station owner had problems sending an order message, from the gas station owner had to go to the Pertamina office and fill in the order data manually, by writing the type of fuel they wanted to order in the book that has been provided, to a gas station owner personally contacts the retail function admin via whatsapp, then the retail function admin collects data on which gas stations send orders manually, after that the retail function admin sends all the data via email to the SSGA division supervisor and division assistant SSGA. This makes time more effective and efficient because the gas station owner whose message does not enter the MS2 system does not need to go to the Pertamina office.



V. Conclusion

Based on the research that has been done, the conclusions that can be drawn are:

1. After research related to the proposed improvement of the fuel ordering business process using the MS2 application was carried out which aimed to be able to overcome the problems that exist in the business process of ordering Baai Island FT, Bengkulu by using the Business Process Improvement method and applying the apply improvement technique stage.
2. From the results of the GAP identification that has been carried out related to the ordering business process owned by Baai Island FT, Bengkulu. There is a difference between the actual conditions and the standard business processes that have been made by FT Pulau Baai, Bengkulu. the factor that becomes the GAP is that there are still sms from the gas station owner that does not enter the ms2 system so that there are problems related to the provision of fuel at the gas station, this factor is then used to make improvements to existing business processes
3. The results of the design for improving the fuel ordering business process using the ms2 application is the need for additional human resources as retail admins to monitor and collect SMS data that does not enter the system to be sent to the SSGA supervisor and SSGA assistant

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