



Business Process Analysis for Transfer Payment Transaction Case Study: An LPG Distributor Company in Bandung

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Abstract: This research will analyze the business process for transfer payment transactions inside one of the Liquid Petroleum Gas (LPG) distributor companies in Bandung. This research aims to understand the current situation of the business process, give a solution for the business issue faced by the company, and speed up the business process. The analysis in this research was done by using two methodologies, customer value chain analysis and business process simulation. This research used customer value chain analysis to visualize the flow of information regarding the transaction payment from the customer to the company. This research used business process simulation to calculate the processing speed of the current situation to determine that the process is possible to be improved. For the simulation, this research utilized iGrafx software. The research finds that in this LPG distributor company, there is a problem of undetected transfer payment. This business issue creates opportunity loss and bottleneck in the company. This research found that the company's current business process for transfer payment transaction is not efficient enough. Simulation results supported this finding and became the basis for developing some alternative solutions for this business issue. This research proposed three possible solutions based on an information technology system to solve the issue. The targets for alternative solutions are eliminating the undetected transfer payment cases and increasing the company sales number by making the business process more efficient.

Keywords: *LPG, distributor, customer value chain analysis, business process, iGrafx, information technology*

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INTRODUCTION

LPG is an important energy source that widely used in Indonesia usually contained in the cylinder (Pitana, Gurning, & Fikri, 2017). City gas supply in the pipeline is still not well developed in Indonesia, so LPG in cylinders is still the most effective way for the customer to obtain LPG as a fuel source for their cooking or heating activities. An LPG Distributor Company task is to deliver LPG cylinders from the LPG filling stations to the customers. The case study in this paper is an LPG distributor company that operates in the Bandung area. The LPG itself is a product of state-owned company which engaged in the energy sector, which includes oil, gas, and renewable energy. The LPG products consist of multiple packages and available in different capacity. First of all, there are two main distinctive classifications of the LPG; there are Public Service Obligation (PSO) and non-PSO. PSO means the product is subsidized by the state, so the LPG price is more affordable to the less fortunate citizens (Cahyaningrum & M. Simatupang, 2013). The PSO LPG is only available in 3 KG capacity. Non-PSO LPG is different, its price follows the global oil price, so its price can

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fluctuate but not as frequent as gasoline or diesel fuel price. Non-PSO LPG available in a lot of capacity and variants, which includes LPG 12KG & 50KG, Bright Gas 5.5 KG & 12 KG, and Bulk LPG.

This LPG distributor company has a main office that controls most of the distribution activity. This company only sells non-PSO, LPG products. This company has a central warehouse that holds most of its LPG stock. They also have seven branches that spread through Bandung. Main office and each branch also hold some inventory to facilitate quick re-stock for the nearest driver. Most of the sales come from delivery order, about 90% of total sales, and the rest comes from customer shopping directly to store. The delivery order can be taken by phone or order via WhatsApp. The main office operates 36 main fleets of vehicles and two backup vehicles. Their customers include household, restaurant, business, and sub-agents. They have an issue at the transaction sector when there are undetected transfer payments that cannot be matched with the invoice. When the payment cannot be detected, it will be difficult for finance division to confirm which transaction that had been paid and the one that had not been paid yet. This created some potential loss in sales for the company the next day because the company needs to reconfirm payment back to the customer. The aims of this research are to understand the business process of this LPG distributor company, to analyze the numerical data of current situation by using iGrafx simulation, and to provide the company three alternative solutions to solve the business issue. This paper will be structured as follows. In next section will be explained the literature review that becomes the fundamental theory of this research. Then Method section will be described the research methods that we used for this paper. In section 4 will be discussed about the business issue. In the Results section, we will explain the iGrafx simulation result of the current situation and the alternative solutions. Also, we analyzed the simulation results in this section. The discussion section will be about further analysis of the findings and also a comparison with previous researches. Finally, in the last section, we will present the conclusion of this research.

LITERATURE REVIEW

The business issue, which is undetected transfer payment, is about the problem in the process and information handling between divisions. The process is a series of activities that transform input into an output that can provide more value to the organization (Damij, 2007). Analyzing a process can answer how many customers can be served at a time, then how long does it take to serve one customer, and what changes can be made to increase the capacity (Grozniak, Kovacic, & Trkman, 2008). The analysis should be able to provide benefits for the future of the business and can bring impact to decision making in the management.

In the process, there are several terms such as buffering, blocking, and starving. Buffering occurs in a multi-stage process where the output is placed in a storage area before it can be used in the next stage (Damij, 2007; Wartika, Surendro, Satramihardja, & Supriana, 2015). Blocking occurs when activity at a stage must stop because there is no available place for finished item or work to continue the work on them. Starving occurs when activity stops because there is no more work to do. Another possible occurrence in a process is a bottleneck, in which there are resources that limit the output capacity so that slow down the process and even can stop the whole process entirely.

The value of information is really important to be considered in this era. The company must be able to use information effectively in the management of the supply chain. Using information technology can help the company to make their business process more effective and efficient (Grozniak et al., 2008). Effective information sharing between divisions is important to make sure that each division can process the data more quickly for their own task. Effective information systems can also cut lead times by reducing the portion of lead time during order processing, paperwork, stock checking, transportation, etc.

There are other researches about business process that had been conducted before. Research about process reengineering for distribution channel had been conducted that aimed to the proposed methodology for distribution network reengineering (Grozniak & Maslaric, 2012). Another research was about evaluating a methodology for business process management that concludes not all business improvement ideas can bring an actual improvement, all ideas need to be tested with a proven methodology to validate its improvement (Satyal, Weber, Paik, Di Ciccio, & Mendling, 2018; Taorid, 2016). The similarity between this previous researches, and this research is that the existing business process needs to be analyzed first then be compared with the proposed solution. Business process needs to be modeled so it can be analyzed and to proposed improvement. Business Process Modeling Notation (BPMN) provides a notation that can be easy to understand for every business user that needs the business process model (Dasig Jr, 2017; Wongwatkit, 2012). BPMN 2.0 is the most widely used tool for business process modeling (Gawrol'ska-Bâaszczyk, 2016). There is some software that can be used to create the business model. One of the previous research used BizAgi to create

the business process model (Wongwatkit, 2012). The advantage of using BizAgi is that this software provide the user with easy to understand interface. But this software have limited customization options, so the user can only design the business model based on what BizAgi provides. Other software that can be used for business process modeling is iGrafx. iGrafx enables user to modeling the business process and to simulate the business process (Damij, 2007). The simulation provides us with numerical data that can be analyzed.

METHODS

The methods that were used in this research are through analysis of business process from observation, interview, and computer simulation result. Data related to the business issue was gathered by doing an observation of the activity in the company, from receiving the order to delivering the LPG. Interview with four peoples from the company that involved with this matter was conducted to confirm the findings. Then conduct some diagnostic to find the root cause of the findings. After that, the transaction activity in the company can be captured by using Customer Value Chain Analysis (CVCA). From the CVCA, the flow of information that happens from each stakeholder in the value chain can be analyzed (Donaldson, Ishii, & Sheppard, 2006). Then the CVCA model was translated into a business process model that based on Business Process Modeling Notation (BPMN), so it can be simulated with the iGrafx software. The simulation results showed the condition of the current situation on how long the process will take and where the bottleneck is. Then three possible solutions ranked from the difficulty to implement in the company were proposed to solve the business issue. These three solutions will be simulated to show the improvement based on the results.

RESULTS

Analysis of Business Issue

From the observation and interview that had been conducted, there was some business issue that causing an issue for this LPG distributor company. Based on the marketing operation manager and drivers, there was some problem in detecting multiple payments (through bank transfer) that have a similar amount of money and no information on which one of the payers that already transfer the money and which one that is not transferred yet. Every day there are about 10 cases of undetected transfer payments occurs with the same amount of money, and about 2-3 customers are still not paid the receipt yet. One that responsible for confirming the payment is the driver itself at the next day after the finding. This-non-value added activity by the driver is creating wastes; waste in transportation while reconfirming payments to the customer location and waste of waiting to make sure that all transaction is recorded and the all payment can be detected from the bank report.

This waste creates some opportunity loss from loss of sales during reconfirm activity by the driver and from the unpaid receipts. This problem mostly occurred in the sales of 50 KG LPG, with net price Rp583.000 for a refill. The manager that responsible for these matters gave an estimation of about 10 lost sales each day with an average amount of 20 cylinders of 50 KG LPG. So this company is losing about Rp1.660.000/day or Rp303.160.000/month (counted in 26 workdays). This company wants every transaction recorded, cash, and bank transfer, as soon as the customer receives their order. They want zero cases of undetected bank transfer payments. The service level of their delivery also becomes a problem. There are several backorders because the driver cannot deliver the LPG during the work hour. Table 1 shows the current situation and targets to solve the business issue.

Current Service Level:

$$\text{Service Level} = 1 - \frac{\text{Backorder}}{\text{Demand}}$$

$$\text{Service Level} = 1 - \frac{5}{30} = 83\%$$

Table 1 CURRENT SITUATION AND TARGET FOR THE BUSINESS ISSUE

Parameter	Sales Opportunity	Service Level	Undetected Transfer Payment
Current Situation	Lost Sales 3%	83%	10 Cases/Day
Target	Gain the 3%	Sales >90%	0 Cases/Day
Gap	Rp303,160,000/month		

These lost sales also contribute to the sales data trends as can be seen in Figure 1. The company wants sales to be stable at 17400 cylinders per month. But the data shows that sales performance in the current situation was a downward trend. Only in January 2018 and April 2018, the sales can exceed the target. Of course, we should mind that in February and June there were fewer work days (Monday to Saturday for this company) especially in June there was a long holiday.

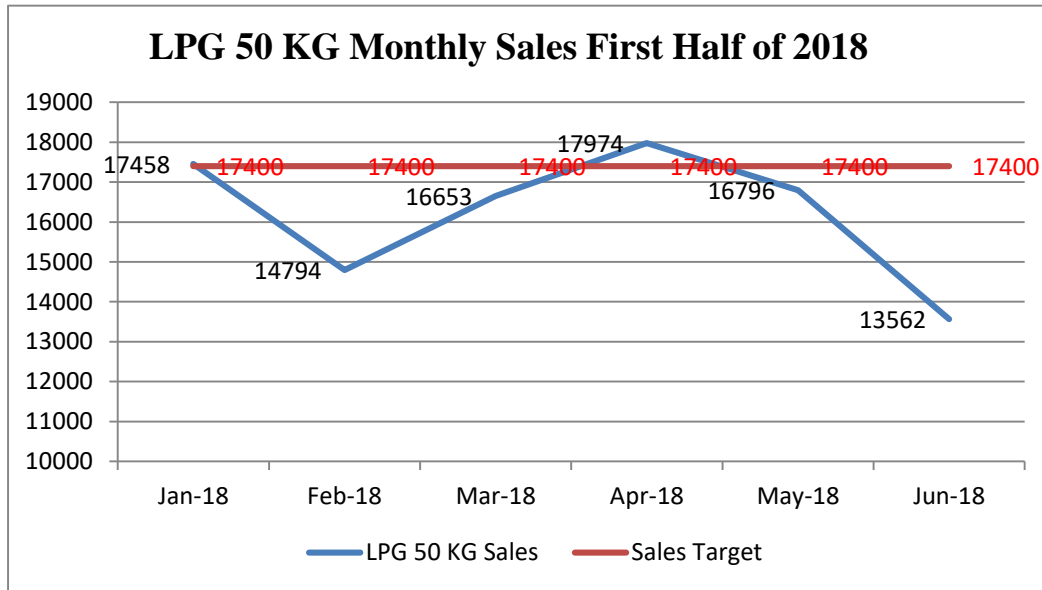


Figure 1 LPG 50 KG Sales and Target First Half of 2018

The objective of this research is to provide a solution for the business issue in this company.

Root Cause

This paper used (Goldratt, 1990) Current Reality Tree (Mabin, 2015) to identify the root cause that created some undesirable effects. Current reality tree can help to understand cause and effect the situation that the author wants to improve. Appendix section shows the current reality tree diagram. The undesirable effects of the business issue start with waste in transportation, waste in waiting, waste in motion, and uncertain delivery time. There is a waste in transportation because the driver must reconfirm payment back to the customer, which is not value-added activity since it does not bring more sales and value to the customer. There is a waste in waiting because the driver needs to wait in line in the office, and finance division cannot do anything about the payment until drivers bring the invoice to the office. Any payment that they already received in their bank account needs to match with the invoice. If the payment not matched, then driver instead of delivering more LPG, they need to reconfirm payment from the customer again. This activity does not bring more value to the company and the customer. This activity just becomes a waste, so there is a possibility of lost potential sales during the reconfirm activity. So there is undetected transfer payment, a payment that not matched with the invoice.

Another undesirable effect is uncertain delivery time. Customer cannot get precise information about the arrival estimation of their order. Because the customer placed the order to the operator, but the operator themselves did not know the exact location and number of stock that the driver currently holds. This is because the communication between the operator and driver is only about giving delivery task. Another possible cause for this situation, there is some connection problem between the operator and driver, but this problem is more the responsibility of the network provider. So there is a problem in information sharing between divisions because there is lack of information system to facilitate the information sharing. This problem is reducing the service level because the customer cannot get a promised delivery time. Customers in the delivery business value the information about delivery time and how many stocks the driver holds, so they can expect when to receive the product.

After analyzing the current reality tree, the root cause is there is no Standard of Procedures and System that supports transfer payment. Lack of customer information and the timing of invoice report create a problem when the staff wants to match the payment with the invoice.

Customer Value Chain Analysis

After the root cause had been identified, we need to understand how the process happens from customer order to payment received. This research will use Customer Value Chain Analysis (CVCA) to capture the whole activities. Customer Value Chain Analysis is a tool to identify stakeholders, their relationship with each other, and each of their roles in the product's life cycle (Donaldson et al., 2006).

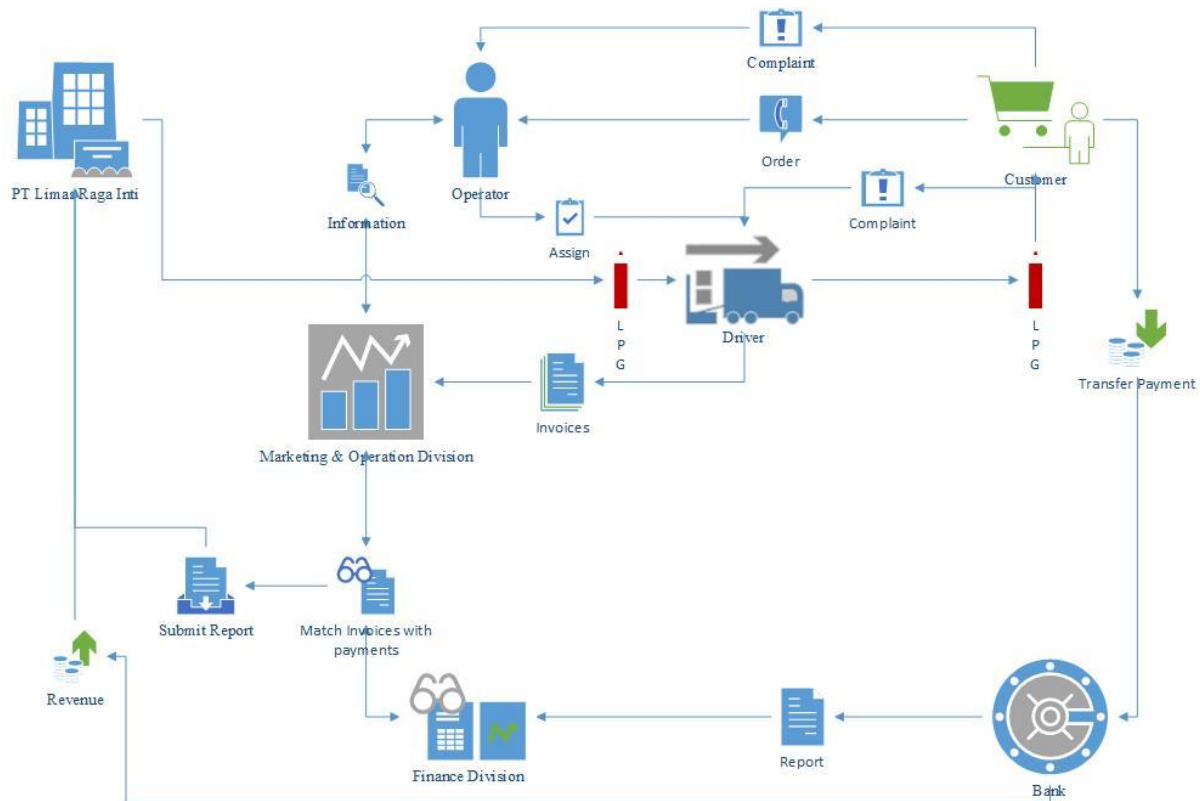


Figure 2 Customer Value Chain Analysis on LPG 50 KG Sales

From the observation at the company, in Figure 2, we can see the red circles as to where the business issue of undetected transfer payment happened. It is about the information flow from the driver (invoice about transfer payment) to marketing & operation division and the payment received by the finance division. The information was delayed since it can be delivered after the driver finished completed all delivery order.

The issue is causing lost sales because the driver needs to reconfirm payment to the customer. There are some payments and unpaid transaction with the same amount. This happens because the bank transfer payment cannot be detected early by the company. The report of the invoice comes to the office at the end of the day when every driver finished all of their delivery order. The invoice lacks important information about the transferee name and bank account. This lack of information was happening because there is a problem in the transaction record procedure and timing of the report. After understanding the flow of information and which part of the business that impacted by the issue, the current situation will be simulated in iGrafx to get the numerical data of the issue.

Simulation of the Current Situation

To prove the situation because of the business issue, the author will be using simulation using iGrafx Process for Six Sigma. The model for this situation will be designed based on Business Process Modeling Notation (BPMN) (Penicina, 2010). For this simulation, we need to design the business process based on observation in the company that needs to represent the current situation (Xia & Sun, 2013). First of all, the author will explain the complete process of a delivery order to the matching transaction with the invoice.

In the complete business process, this LPG distributor company can accept two payment methods. First is a customer can pay in cash directly to the driver, and then the driver will deliver the cash to the office at the end of the day along with the invoice. The second method is after customer received the LPG, they can transfer the payment

to the company bank account. The delivery order and transaction process start when customer order LPG through phone calls, then the operator will answer the calls and then record the order. The operator will search for the customer information in the company database for their location; the customer phone calls are still connected through this time. If the customer already existing or return customer, then the call will be closed, and the operator directly assigns the driver to customer location. After the customer receives the order, the driver then writes the invoice and takes the cash payment or just writes the invoice for the transfer payment later by the customer. Then the process will be repeated, while finance division receives the transfer payment, but they cannot record the transaction yet until the driver finished all delivery order and report the invoices at the office at the end of the day.

The business issue that analyzed in this paper was only related to the transfer payment. The product that will become the focus only the LPG 50 KG, since almost all of the transfer payment is paid for this type of product. Based on the interview with the company manager, transfer payment for LPG 50 KG counted at least 30/day, while for other product only 1 or 2/day. So for the simulation result, we altered the model in Figure 3 so only transfer payment that happened in the process.

Before we can get the result, we need to input all necessary information such as the time length for each process. List of data that had been inputted can be seen in Table 2. The number that inputted was based on observation and testimony from the driver and manager in the company. The first simulation is about the current situation in the company where the issue existed. The simulation result can be seen in Table 3. We only focused on the number of successful transaction and average waiting time per transaction because those two aspects are the one that brings value to the company and customers.

Table 2 DATA INPUT ON IGRAFX FOR THE SIMULATION

Process	Time Needed	Type
Order LPG	30 seconds	Constant
Record Order	30-60 seconds	Distributed Normal
Check Customer Information	30 seconds	Constant
Ask Customer Location	30-60 seconds	Distributed Normal
Receive Delivery Task	5-15 minutes	Distributed Normal
Deliver LPG	10-30 minutes	Distributed Normal
Receive LPG	5 minutes	Constant
Transfer Payment	3 minutes	Constant
Make Invoice	3 minutes	Constant
Receive Transfer Payment	1-5 minutes	Distributed Normal
Drive Back to Office	20-45 minutes	Distributed Normal
Report Transfer Invoice	2 minutes	Constant
Matching Report & Payment	20-30 minutes	Distributed Normal

Table 3 RESULT OF SIMULATION FOR CURRENT SITUATION

Number of Successful Transaction	Average Waiting Time per Transaction	Bottleneck Location and Time Cycle
3	3 hours 4 minutes 48 seconds	Marketing & Operation 2 hours 49 minutes 12 seconds

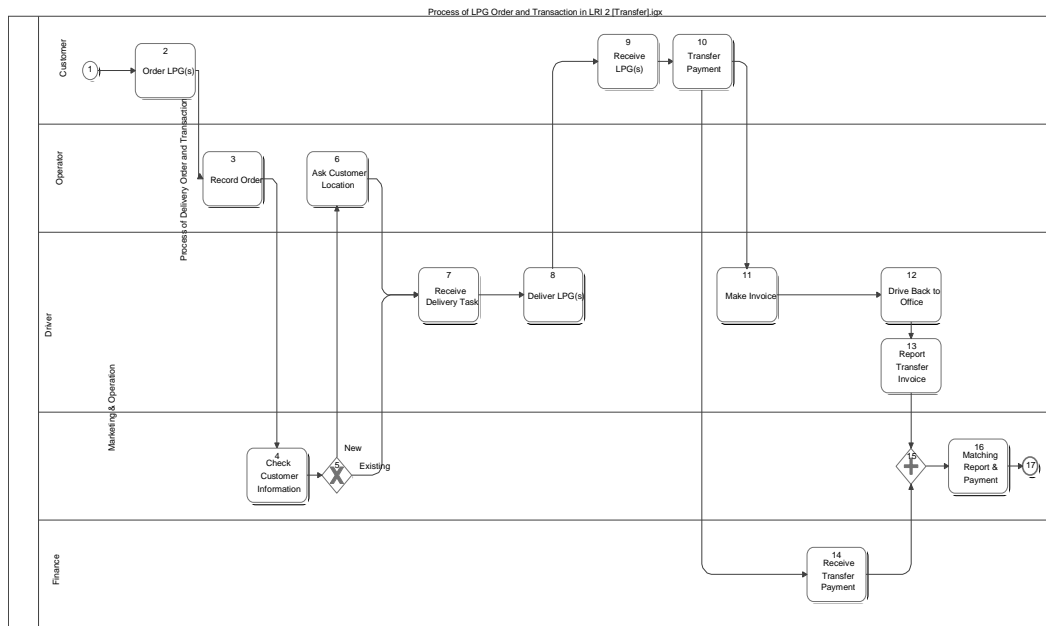


Figure 3 Business Process Model for Delivery Order and Transfer Payment Transaction Current Situation

Simulation of Solution Options for the Business Issue

The bottleneck at marketing & operation division from current situation simulation needs to be solved. This research proposes three solutions for the issue. The solutions were designed to eliminate the issue by solved the root cause. The root cause from section 4 is “No Standard of Procedures and System for Transfer Payment”. The three options will vary in the difficulty level of implementation, costs, the effect on the infrastructure, and the level of benefits for the company. Solution option one will be the simplest and fastest to implement; this main solution focus is to fix the standard of procedure and add a little help from a simple information system such as an instant messaging system to help faster information sharing. Solution option two still will focus on fixing the standard of the procedure but by adding more advanced information technology system (website for delivery order) to simplify the business process so the service level can increase since the customer will wait for the delivery in less time than before. Then the third solution will be the most advanced by using some information technology that very popular this day, which is a mobile application for delivery order. This solution will represent the technology that most of the other type of business company is using right now. The CVCA model for each solution can be seen in Figure 4, 5, and 6. BPMN model for each solution can be seen in the Appendix section. So list of solutions with the pros and cons:

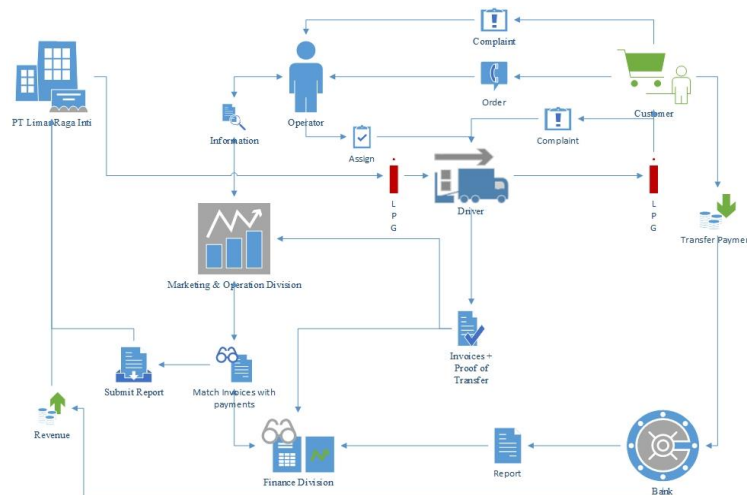


Figure 4 CVCA for Delivery Order and Transfer Payment Transaction Using Solution Option 1

- Option 1: Utilize an instant messaging system that has already been implemented for another task also to become a facility to delivers invoice instantly after the driver deliver the LPG to the customer. The invoice report is given to finance division, so they can quickly trace the payment that had been received in the company's bank account. From Figure 4, we can see that the information about the invoice from the driver can be informed directly to the Finance division through the instant messaging system.

o Pros:

- Easy to implement and understood for the driver
- The facility to accommodate this solution already in place
- No need to add more resource

o Cons:

- There is still some delay in information sharing
- Highly depends on the accuracy of the driver when writing the invoice
- Add more task for the driver

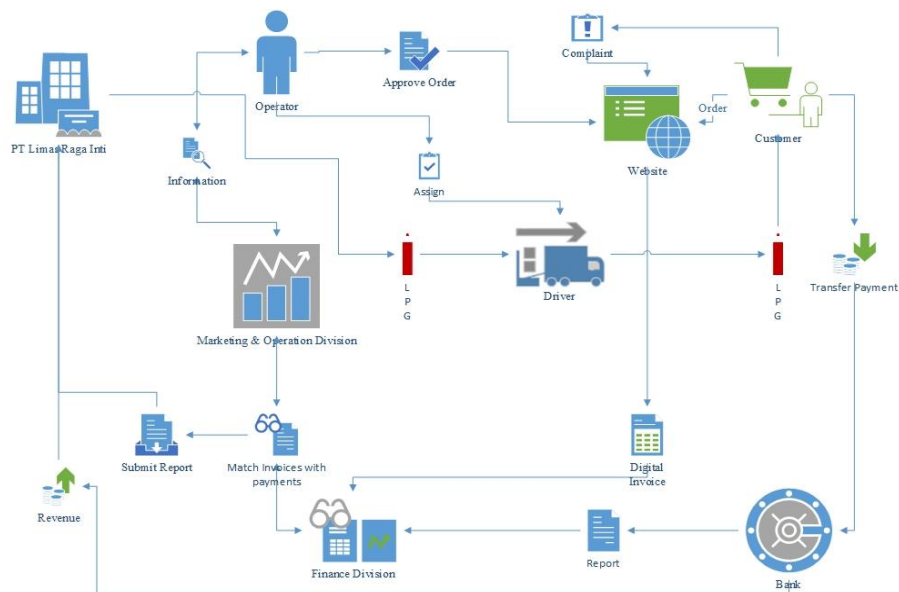


Figure 5 CVCA Model for Delivery Order and Transfer Payment Transaction Using Solution Option 2

- Option 2: Create a website so customer and staff of this company can easily access it anytime. Customer can order LPG from the website so the order can instantly be recorded in the database, then the operator can receive the order and assign a driver to the customer location more quickly than by phone order as the previous order method. Customer needs to create some account or profile, so then they can upload the proof of transfer in the website. Finance division can access the uploaded information at real time so they can match the payment that they receive from the customer through a transfer with the digital invoice generated by the system far more quickly than before. Therefore speed up the whole transaction record and matching process. Figure 5 showed the website that has a database system that can be accessed anytime by the staff and management of the company. The database becomes a central system for the transaction from the company side and customer side.

o Pros:

- All order and transaction through the website is instantly recorded
- All staff can access the data stored in the database at real time
- Easier for the customer to order the LPG.

o Cons:

- Need to establish a new department to handle the database and website maintenance
- Staff need more training to handle this new type of order system
- Need to spend resources on developing the system.

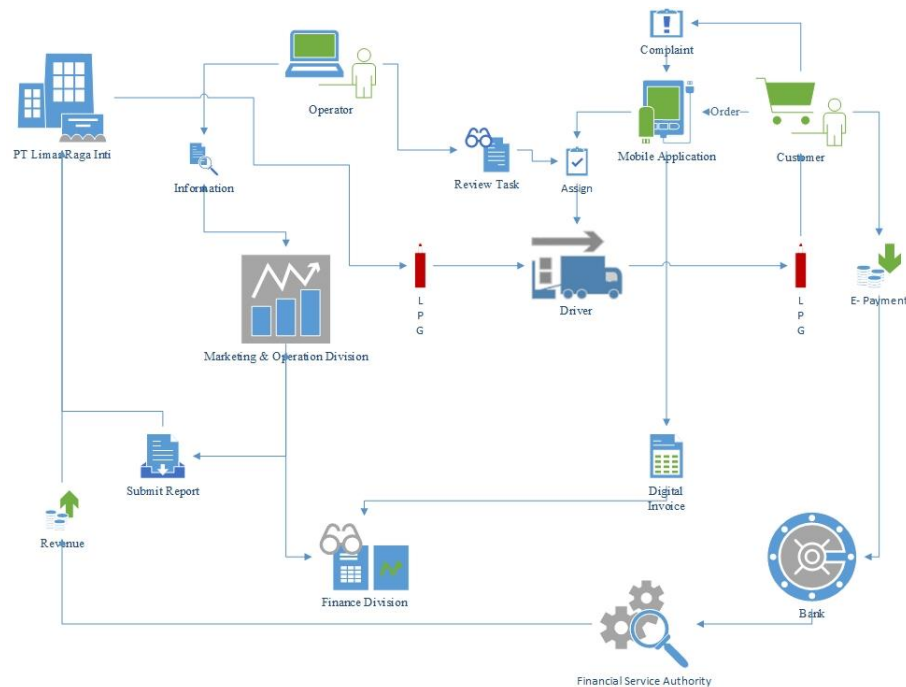


Figure 6 CVCA for Delivery Order and Transfer Payment Transaction Using Solution Option 3

- Option 3: Create a mobile application so the customer can order from their smartphone, check the driver stock and location, able to pay instantly, and have an estimation on when their order will arrive. This system also can bypass the order from the customer to the driver directly, so the operator task is to monitor the driver and review order from customer. Pay instantly means that the application must have some electronic transaction ability such as e-wallet or virtual account that the customer can transfer the payment to. So there is no need for the customer to upload the proof of transfer, and the transaction can be instantly matched. Figure 6 showed the mobile application system that can be accessed by the customer. This application is integrated with a central database system at the office. So other staff besides driver and operator can also monitor the activity and gain access for the data that their division is needed.

o Pros:

- Shorter lead time in the process
- Easier for the customer to order
- All transaction recorder in real time, so easy to monitor from the office

o Cons:

- The most expensive option to develop
- Need collaboration with the bank and Financial Service Authorities to accommodate and regulate instant payment
- Take more time to develop and to be implemented to all level (for example when introducing the application to the customer).

Then we conducted more simulation for each solution. Some of the process from the previous model of the current situation can be eliminated because it is replaced by an information technology system. The simulation result for these alternative solutions can be seen in Table 4.

Analysis of the Simulation Result

From Table 4, we can see that the number of the successful transaction only three in the current situation. Successful transaction means the process after the LPG was delivered to the customer and the transfer payment matched with the invoice that was completed in the office and all staff completed all of their own tasks. To measure the benefit of the solution, we can calculate how much sales that resulted from the increase of successful transaction.

The simulation was using only one driver and one cylinder of LPG per sales in the model to simplify the process. But in real situation there are 24 drivers that can deliver the 50 KG LPG. So we can multiply the result by the number

Table 4 *SUMMARY OF THE SIMULATION RESULTS*

Simulation	Number of Successful Transaction	Average Waiting Time per Transaction	Bottleneck Location and Time Cycle
Current Situation	3	3 hours 4 minutes 48 seconds	Marketing & Operation 2 hours 49 minutes 12 seconds
Option 1	5	2 hours 56 minutes 24 seconds	Make Invoice 2 hours 23 minutes 24 seconds
Option 2	14	2 hours 4 minutes 48 seconds	Receive Delivery Task 2 hours 36 seconds
Option 3	17	1 hours 13 minutes 48 seconds	Receive Delivery Task 1 hour 2 minutes

of drivers to know what the highest revenue that can be gained for the company is. But the real revenue number will depend on the demand from the customer itself.

Current Situation Sales : $3 * \text{Rp}583.000 = \text{Rp}1.749.000$.

Solution Option 1 : $5 * \text{Rp}583.000 = \text{Rp}2.915.000$.

Solution Option 2 : $14 * \text{Rp}583.000 = \text{Rp}8.162.000$.

Solution Option 3 : $17 * \text{Rp}583.000 = \text{Rp}9.911.000$.

Table 5 *PERCENTAGE OF SALES INCREASE OF TRANSFER PAYMENT*

Solution	Δ Increase	Sales Revenue/day (10 cases)
Option 1	66.67%	Rp11.660.000
Option 2	366.67%	Rp64.130.000
Option 3	466.67%	Rp81.620.000

From Table 5, all solution options give positive sales increase percentage based on the simulation. But simulation results need to be compared with the real number from the current situation. Because of the business issue, at the current situation, the company is potentially losing about Rp11.660.000/day for every 10 cases of 50 KG LPG sales. Currently, the average sales revenue per day is Rp363.209.000. So Option 1 will eliminate the loss but did not give any sales increase. Option 2 will bring sales increase Rp40.810.000/day (+11.2%); it will exceed the company target of 3% sales increase). Option 3 will bring sales increase Rp69.960.000/day (+19.3%).

All option will eliminate the undetected transfer payment cases. Option one solves the issue by informing the finance division with the invoice and proof of transfer from the customer right away from the driver. But in option one the driver will be given more task than before to upload the information through instant messaging, that explains why there is a bottleneck during make invoice task. Option two fixed the issue by implementing an integrated database in the website, so customer can upload the proof of transfer and finance division can directly checking the payment in the website. This option also improves sales by facilitating more easy ordering system through a website, which can speed-up the ordering process. Option three gives the most benefit from all three options. It gives the biggest sales increase and the shortest waiting time. Option 3 fixed the issue by implementing e-payment through a mobile application which can be downloaded by the customer to their smartphone, the transfer payment for each transaction have virtual account option or unique code, so every transaction has a different identity, this will make the process of matching transfer payment and invoice more instantaneous. This option also shortens the ordering process to delivery process by eliminating the need of the operator to assign driver, replaced it by the driver that receive the order directly from the customer. Operator task now after implementing this option three is just monitoring the process and confirming

the order.

DISCUSSION

All three alternative solutions can eliminate the undetected transfer payment issue. The difference between those three is on how quick that the process can be speeded up after implemented the solutions. This speed up process is important for reducing the bottleneck (which is one of the undesirable effects of the root cause). Solution option one can improve the number of a successful transaction by adding two more. It may be not significant, but this solution is the fastest to be implemented by the company to solve the issue. Just by changing the procedure of invoice reporting activity, this solution can increase the number of successful transaction because the finance division can check the payment as soon as the driver sent the invoice photo. This solution can speed up about 8 minutes of the average waiting time. This result can be confirmed with another research that did similar type of simulation by changing procedure in the process, but they did it for enhancing patient response time in hospital (Gawrol'ska-Bâaszczyk, 2016). This paper focused on average waiting time because this is where the process can bring value added for the customer. Customer will be more satisfied if they can get their order as soon as possible. Then we can estimate the amount of backorder that is possible to happen in this solution. Since the information sharing is relying on the response of the driver to inform the operator, and only rely, some instant messaging system that prone to human error (for example not read the message, missing some information, wrong information) it is possible that we can expect three backorders from 30 demand orders. So the service level will be,

$$\text{Service level option 1} = 1 - \frac{3}{30} = 90\%$$

Solution 2 improves sales by 366.67%. It is a big improvement compared to the current situation. The sales increase because of the whole process is quicker than before. This solution eliminates some process, so the waiting time of the customer side will be reduced. Therefore, the driver can deliver LPG to a lot more customers. The information also can be stored in the database that can be accessed by everyone in the company responsible for processing the information. Database and decision-support system that created by developing information technology for the business process should be utilized fully by the management as shown by the previous research (Groznik et al., 2008). Since this solution relies on the system for information sharing, but the operator still plays a major part to confirm the information, we can expect the backorder will reduce into just two from 30 demand orders. So the service level will be,

$$\text{Service level option 2} = 1 - \frac{2}{30} = 93\%$$

Solution 3 improves sales even bigger by 466.67%. This solution eliminated the process from customer to operator, so the driver can directly take orders from the customer. This solution can speed up the process even faster. If the company can manage to get electronic payment method permission from the financial service authority, the transaction payment matching process can become more instantaneous. This can eliminate the possibility of human error, for example, missing invoice or mistake during transaction record. The company can choose from those three options, which one is the most suitable solution for the company to solve the issue. It is also important for the company to train its employee properly before implementing this solution (Dewi, Anindito, & Suryadi, 2015). The application of information technology for improvement in the business process needs competent employees to handle the system. Since this option is more accessible for information sharing, and the customer can know the exact location of the driver right away, we can expect that the backorder will be less than before. Because the customer can estimate the delivery time from the mobile application before they placed the order. So we can expect at least one backorder for every 30 demand orders. So the service level will be,

$$\text{Service level option 3} = 1 - \frac{1}{30} = 96\%$$

CONCLUSION

This paper has explained all the stages of business process analysis for the transfer payment transaction. From the business issue to find the root cause, customer value chain analysis, simulation of current situation, simulation of three solution options, and finally a discussion about each solution impact for the company and review about other similar research that had been conducted before. This research has shown the business process by using CVCA and BPMN. From the CVCA we can see the flow of information within each stakeholder. From the BPMN model, we can simulate the current situation and analyze the result.

The result of the simulation is that some process can be eliminated by implementing some information technology system to speed up the whole process. If the process can be speeded up, then the driver can deliver LPG to a lot

more customers. The author gave three possible solutions. Option 1 utilizes the instant messaging system for invoice reporting. Option 2 implements a website for a customer order, created a digital invoice in the system, and become the media for the customers to upload the proof of transfer payment. Option 3 implements a mobile application system, so the customers can orders directly from the driver and pay instantaneously using the electronic payment function in the application menu.

This paper can be continued for future research by calculating the costs of each solution and its break-even point. This will help the management to choose which solutions that are more suitable for the company with its current economic situation.

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