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Implementation of Benchmark Inventory Control in PT. X to Increase Sales Volume in ProQ Workshop as SMEs in Indonesia

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Abstract—This paper is written based on how a business coaching process can help SMEs improve which area need an improvement such as HR, finance, operational, or marketing section based on the personal experiences of the owner and based on the coach observations to the company. ProQ is an SME engaged in maintenance and repair services of motor vehicle air conditioner. In ProQ, there is no inventory control process; therefore, its operational activities are disturbed. This paper is the result of applying inventory control for ProQ workshop through problem identification process, problem solving recommendations, and implementation of the recommendations. The step taken is to conduct a benchmarking process to PT. X which has run inventory control on a large scale and with a large inventory of spare parts. From the results of benchmarking, there are few steps that can be done by adapting the inventory control of PT. X, namely the importance of the existence of part-man and its SOPs, random sampling and stock operational activities are scheduled and have clear records and reports, and recording of the daily in and out of spare parts from the inventory which is well-organized and PT. X also has a classification of fast, slow, and non-moving inventory through the age of spare parts. By implementing the recommendation in ProQ, the inventory control in ProQ will be better.

Index Terms—business coaching, SMEs, inventory control, benchmarking, stock opname, random sampling, FSN classification

I. INTRODUCTION

The objective of this paper is to outline a suggested approach to develop a proper inventory control of stocks in the targeted SMEs. The selection of this particular company is significant for several reasons. First, the importance of SMEs to the Indonesia economic growth. SMEs have important contributions to the Indonesian economy in order to contribute to Gross Domestic Product (GDP) and open the chances for employment. Over time, the number of SMEs from year to year in Indonesia show an increasing growth. This causes the level of competition among players is getting higher

Second, The Era of the Asian Economic Community has become one of the fears for business actors in Indonesia because the greater competition will occur and the ability of local industries to be able to compete in the global market is still weak. Business actors are not ready yet because of limited resources owned by the company. The spirit in facing MEA is

expected to improve the survival of the actors of SMEs in their own country and can compete in the global market. Thus, it is necessary development and empowerment of SMEs in order to generate new innovations and improve competitiveness both at local and international levels (Kompasiana, 2016).

Nowadays, there are many programs conducted by the government to support the development of SMEs in Indonesia such as by conducting entrepreneurship-related training, product innovation, business development and interest subsidy that enables MSMEs to get low interest credit up to 12%. One of these programs is business coaching in which the government and the university will raise the capability of SMEs in Indonesia. In this SME, the inventory control is not implemented; therefore, I will build an administrative system that is capable of handling an inventory control process in SME business and minimize the factors that will disturb the inventory control process. The standard inventory control will be also created to make the safety stock, its reorder point, inventory cost, and its fast, slow, and non-moving inventory. From the processes above, I, as the coach, will present in building, running and evaluation each process.

II. LITERATURE REVIEW

A. Inventory

Inventory is the stock held for future production or sale and is viewed as an idle, yet valuable resource [1]. Hence, inventory is "an asset on the balance sheet and a variable expense on the income statement" [2]. Inventory control is the availability of goods at the right place, right time, right quantity and right quality. Inventory management has a strategic role in organizations due to its direct impact on the service levels. Ideally, organizations want to keep enough inventory to meet customer demand and maintain its revenue flow. But having too many inventories can consume valuable capitals and spaces. The challenge is to balance the supply of inventory with the demand for inventory [2].

There are several reasons for holding inventory. Coyle, Langley, Gibson, Novac, Bardi [2] discuss five of them: a) batching economies, related to buying larger quantities in order to seek the price discounts; b) safety stocks due to
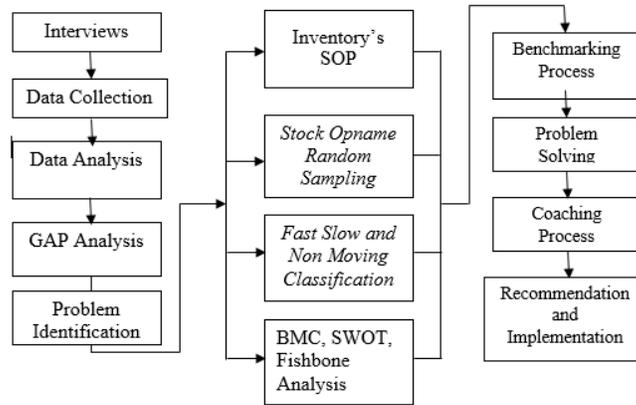
FIGURE 1: The Steps of Business Coaching Process

the uncertainty of the demand; c) transit time and work-in-process (WIP), longer lead times for production/transportation meaning higher costs; d) seasonality, which has a direct impact on how much and how long to hold inventory; and e) anticipatory stock, related to holding inventory to cater to unusual events that could have a negative impact on the business.

Inventory is both an asset and an expense. The effective management and control of inventory are the keys to organizational success [2]. Inventory control is the process of coordinating and monitoring the supply, storage and distribution of products to ensure customer requirements are met while ensuring there is no excess or out of stocks. The objective is to create maximum profit from the least amount of inventory without affecting customer satisfaction. The cost of carrying inventory - whether as ready stock and waiting to be distributed - includes the cost of storing inventory; the interest for holding the inventory; the insurance and taxes; and the risk associated with the inventory [2].

B. Control

In the inventory control system of retail companies in Indonesia, inventory control is often defined as inventory management. Therefore, inventory control can also be interpreted as inventory management. Lewis et al. (2014) suggest that management is defined as the administrative process and coordinate resources effectively and efficiently to achieve organizational goals. Stoner (2006) suggest that management is a process, planning, organizing, leadership, and control efforts of members of the organization and the use of all resources that organization owns to achieve predetermined organizational goals.

C. Fast-moving, Slow-moving, Non-Moving Inventory

From Westford School of Management, FSN analysis is based on the level of problem or level of spare parts and alphabet use of F, S, and N stands for Fast-moving, Slow-moving, and Non–moving items. The FSN classification sys-

tem categorizes items based on how often they are removed and how often they are used. Items in inventory can be classified into the following criteria; Fast-moving - Items that are often removed from inventory more than once for a certain period of time. Slow-moving - Less commonly published items that may be once in a certain period of time. And Non–moving - Items that are not removed from inventory at all within a certain time period.

D. Inventory Control

From Heizer and Render [3], inventory control is a very important managerial function for the company since the physical inventory of the company will involve a very large investment in the current assets. Implementation of this function will relate to all parts that aim to make intensive sale efforts as well as product and the use of resources can be maximized. If the company has excessive inventory, it will lead to high expenditures such as borrowing costs, storage costs, and inventory damage risk. While insufficient inventory will lead to inhibition of the smoothness of production so that the risk of loss of sales and customer dissatisfaction due to the desired product is not acceptable at the right time. A good inventory management is inventory management that can maintain a balance between inventory investment and service levels to consumers.

III. RESEARCH METHODOLOGY

A. Research Design

The method used in this paper is qualitative research. It is a method that emphasizes aspects of deeper understanding on a problem rather than seeing a problem. Qualitative research is a research that is descriptive in nature, tends to use analysis and reveals more processes of meaning. The purpose of this method is to understand broadly and deeply about a problem studied in detail. In this research, qualitative method is undertaken by reviewing the primary data obtained through interviews, surveys and/or discussions with SME owners as

well as stakeholders, and observation and exchange of opinion with mentors. The qualitative method is also conducted through literature study by reviewing secondary data in the form of business process documents of SMEs ProQ workshop, research results and other references.

B. Research Steps

The subject of this research is ProQ, an SME engaged in maintenance and repair services of motor vehicle air conditioners. The coaching period is about 8 months for 12 meetings. The interviewees are the owner, head of the workshop, administration officer and mechanics. Benchmarking company is the 1st best practice of inventory control because it is an international company with good reputation and has many workshops all around the globe. The business coaching processes are data collection, data analysis, problem identification, benchmarking process, coaching process, recommendations and implementation at ProQ workshop.

IV. RESULT

A. Inventory Control at PT. X

Stock Opname at PT. X is held once a month and is an obligatory activity to be carried out. Stock opname is performed by a spare parts officer who is responsible for the administration of parts in ProQ or called a partman. At PT. X where the authors did benchmarking, there are 2 employees who serve as partmen, 1 person serves as the head of the warehouse spare parts. In addition to the stock opname, random sampling of spare parts is done once a week with a maximum of 30 items from the classification of fast–moving parts.

Schedule of internal stock opname of PT. X workshop consists of 3 parts. The first part is the sampling stock that is devoted to the item parts that experience in/out movement. This activity is done every afternoon before the workday ends and is conducted by partman. The second part as mentioned earlier is sampling stock for all item parts, which is done once in 1 week and conducted by partman. And the third part is monthly stock for all items that is done every month and is conducted by external party. Official record of stock opname must be made and known by the head of workshop and head of administration.

Random sampling conducted once a week has a purpose to match the actual amount of goods in the warehouse and the database despite the sales transactions during the period of 1 week. By conducting random sampling, it is expected the stock opname process can be implemented more quickly and accurately and also provide an early warning if there is unmatched number of stocks in the database and actual existing in the warehouse. Parts taken for this random sampling are parts categorized in fast–moving inventory. This is because the spare parts in the fast-moving category are spare parts that are very fast going on sale and reorder process back in operational 7 days in a week. Therefore, if there is a mistake of calculation or recording errors, it can be known so as not

to cause problems and differences when calculating the stock opname process.

PT. X has classified fast, slow, and non-moving inventory. The classification is arranged by the head office from the age of spare parts per item through a circular which its implementation is set by each branch. In the circular, it is mentioned that the spare parts included in the category of slow–moving parts are older than 180 days since the date of purchase from a manufacturing company. Meanwhile, non-moving category is a spare part which has exceeded 365 days from the date of purchase. Non-moving items are usually spare parts done by a special order by the consumer but canceled for installation to the customer's vehicle and it becomes non–moving part (dead stock).

There are three steps implemented by PT. X to sell the stock of slow-moving parts and non-moving branches. This is done considering the value of the slow-moving part stock of the branch resulting in interest expense and potential to become non-moving parts (dead stock).

The first step taken to complete the moving stock from the branch of PT. X is a dead stock filtering program. This program serves to process matching, filtering, and allocation of purchase order of a branch with the stock of slow-moving and non-moving of other branches. The second step is the activity of selected item campaign. It is a marketing program to sell parts listed in the phase out stocking policy list. And the last step is to do batch per auction of slow-moving and non-moving parts. This step is very detrimental to PT. X and is the last solution taken to complete the stock-of slow-moving and non-moving-moving parts. The auction is scheduled for one year.

In categorizing fast, slow, and non-moving parts, PT. X uses 4 categories, namely A1, B1, C1, and D1. A1 is a fast-moving stock category in which the spare parts have a maximum demand in 30 days. B1 is fast-moving stock in which the spare parts have demands within 30 - 180 days. C1 is slow-moving stock in which spare parts have demand only in the period of 180 - 365 days. D1 is non-moving stock in which spare parts have no demand in the period of 12 months or more.

B. Inventory Control at ProQ

At ProQ workshop, stock opname is done every 3 months or quarterly. Stock opname is held every March 31, June 30, September 30, and December 31 of each year. However, the SOP says it should be implemented once a month. This process is done by Mr. Sulistyana as the head of the workshop and in charge of spare parts inventory accompanied by one of the ProQ mechanics. The result of the stock opname can be adjusted to the inventory of the spare parts owned by the head of the workshop. Afterwards, matching the number of spare parts should be done if there is a difference between the results of the stock opname with the existing records.

It is known that the recording of parts inventory owned by the head of the workshop and the recording of inventories in the Accurate accounting system is very different. It turns out that this is the result of never adjusting between spare

parts sales and spare parts expenditures in the Accurate system since 2014, so that the number of parts available in Accurate does not have an increase in the number and process of spare parts sales and invoicing during the operational process then using the system buy one sell one. Buy one sell one by the Accurate administrations in ProQ is in the case of the sale of AC parts and spare parts available in the Accurate system. The invoicing will automatically pull the spare parts inventory from Accurate and automatically reduce the amount of available inventory. In the event of spare parts sales, the number of spare parts in Accurate equal to 0; however, in fact the spare parts are available in the warehouse. Therefore, the administration records in Accurate using buy one sell one system, where the purchase of fictitious first to fill the number of spare parts available to 1, and then made the withdrawal of parts for sale in invoices made through the Accurate.

As the system continues to buy one sell one, ProQ no longer updates the inventory data in Accurate and performs daily operations with the methods previously described. Spare parts that are still available in the warehouse will be sold in the event of a purchase by the customer and if it is unsold, it will be stored until the sale occurs. The head of the workshop said that it is the most effective way to reduce the existing inventory without having to refill inventory. However, if the spare parts inventory required by the customer is not owned by ProQ, it will affect the waiting time of the customer repair process. And there is no official record about the stock opname of spare parts made. It is not in accordance with SOP stock opname of ProQ workshop.

Owners of ProQ have already felt that inventory control requires special handling to be able to support the operational performance of ProQ. Therefore, business coaching is expected to provide increased inventory control in ProQ, and this is done by implementing benchmarking with PT. X which is an international company that has implemented inventory control on a large scale. The focus of this benchmarking will be taken through observation of the workshop of PT. X where the operational activities took place and interviewed the partman from PT. X who perform inventory control activities of spare parts. The SOP of the goods pickup flow in the ProQ warehouse can be summarized as follows: it aims to provide guidance on understanding the movement of general spare part taking in ProQ workshop. This SOP has the definition that the movement of spare part of the vehicle is the whole process in carrying out the vehicle repair until it is done. The scope of this SOP covers the procedure of taking the customer's spare part of the vehicle, performing the repair activities until it is done. Executing this SOP applies to the manager of Head of Workshop, the mechanics and persons inventory involved in the process of taking spare parts.

V. DISCUSSION

A. *Recommendation of Applicable Inventory Control for ProQ - SOP Partman*

In the standard operational procedure of the pick-up flow in the warehouse owned by ProQ, it is stated that "the mechanic takes the spare part from the head of the workshop to the inventory for the spare part pickup". It can be seen that there are special employees who handle the inventory department based on the SOP. In reality, however, there are no special employees who handle inventory in the ProQ workshop. In the field, the one who handles manual recording and spare parts removal from the warehouse is the head of the workshop from ProQ namely Mr. Sulistyana, assisted by a mechanic named Eko.

However, this manual recording also faces obstacles when the head of the workshop does not come to workplace, and automatically there is no mechanical manual recording of spare parts and extraction of spare parts used on the day of operation. In addition, based on the results of interviews with the mechanics in ProQ, it is known that the existence of indiscipline in the process of taking parts from the warehouse. It can be seen if the collection of warehouses can be done by anyone; there is no special person who is appointed to take the required spare parts from the warehouse. In addition, in case of mismatched number of spare parts taken from the warehouse and the ones which will be used in the customer's vehicle, returning the spare parts to the warehouse is also not put in the place where it should be; therefore, there is often the difference between spare parts with box wrapper. It is indiscipline that makes the inventory control process difficult to implement properly. With the aforementioned issues, the coach recommends to ProQ to have a special employee in the inventory section or at PT. X, called a partman. Partman here will handle directly the inventory part of ProQ with a special SOP to be added.

This work instruction/SOP has SOP/PROQ/OPR-10 number, aims to provide guidance to the employee of the inventory/partman in understanding the flow of warehouse management in ProQ workshop. Every spare part in the warehouse must be neatly arranged and have a clear explanation on the shelf for the items placed. Daily pick-up form must be filled out and recorded for each out-and-coming spare parts based on the SOP/PROQ/OPR-05 Implementation of stock and stock sampling based on SOP/PROQ/OPR-02 which is the responsibility of the inventory/partman. Reorder to suppliers in accordance with SOP/PROQ/OPR-09 if there are spare parts items that will run out immediately.

B. *Recommendation of Applicable Inventory Control for ProQ - Random Sampling*

The process of stock opname in ProQ workshop is conducted within 3 months and there is no control process which can become an early warning tool if there is a problem in the inventory control activity for daily operation of ProQ workshop. Therefore, the coach provides suggestions to do the sampling process which seems to be the sampling process undertaken by the partman at PT. X.

C. Recommendation of Applicable Inventory Control for ProQ - FSN Category

The classification of fast, slow, and non-moving inventory at ProQ workshop is only known by the employees at ProQ, the head of the workshop, the administration and the general affair, and the head of operations. It is based on experience and observation during work at ProQ workshop. The classification of fast, slow, and non-moving inventory should be evidenced by a clear recording system of the time of purchase and sale of a spare part, so that the age of the spare parts can be known to determine as quickly as the demand of the spare parts within a certain time range.

ProQ data on the purchase of a spare part is recorded in the petty cash with open office spreadsheet program, while for recording in the Accurate system is done by buying and selling system if the required parts are not in the ProQ workshop warehouse. Therefore, it is very difficult to track the age of a spare part item through a purchase and sales note. ProQ is also no longer doing restock spare parts, which is now done by ProQ just spending the stock in the warehouse. Stock in the warehouse is a long stock when ProQ is still an authorized Denso workshop. Every month, ProQ workshop needs to improve the performance as Denso authorized workshop. It is required to make minimum purchases of AC spare parts in Denso workshop. When ProQ is no longer working with Denso, ProQ no longer restocks AC spare parts. What they restocks are fast-moving parts that have a high demand in the daily operation of ProQ workshops.

List of spare parts included in the category of fast, slow and non-moving inventory is based on interviews by the coach with the head of the workshop, financial administration, operations and mechanics. Fast-moving inventory category 1 is spare parts with demand that occurs within 30 days. Fast-moving inventory category 2 is spare parts with demand that occurs within 31 - 60 days. The category of slow-moving inventory is spare parts with demand that occurs within 61 - 180 days. And the category of non-moving inventory is spare parts with demand more than 181 days.

After final discussion, there are eight items of spare parts included in the fast-moving inventory category 1, namely filter cabin, dryer, silica, freon, oil compressor, engine oil, oil filter, and air filter. There are four items of spare parts included in the fast-moving inventory category 2, namely expansion, magnet clutch, blower motor, and evaporator. There are five items of spare parts included in the category of slow-moving inventory, namely compressor, extra fan, radiator cap, and fuel filter. And there is one item of spare parts included in the category of non-moving inventory i.e. cooling unit.

D. Recommendation of Applicable Inventory Control for ProQ - Inventory Card of Fast-moving Item

Having obtained the category of fast, slow and non-moving inventory from ProQ workshop, the next step is the creation of stock cards per item from the fast-moving inventory selected, cabin filter, silica filter, oil compressor, and engine oil. These four items are selected because these spare parts are items that become demand in the daily operation of ProQ workshop and there is always a sale almost every day.

This stock inventory card will be filled out every day by anyone who does the activities of taking and adding the number of items of the spare parts. The item type will be filled with the five items previously mentioned. Red stock level is the safety stock limit where when the remaining items in the stock card have touched the stock level number, it will be reorder to the supplier. The item name and item code will be filled with each item type of spare parts included with the item type along with the code of each type of spare parts. The date of each carrying activity/expenditure of goods will be filled in the number of incoming or outgoing, and signature is filled by those doing the activity, so it will be known who is responsible for the item. And at the end of the operational day, the remaining inventory of each item of fast-moving parts will be known. Therefore, knowing the remaining inventory at the end of the day, the stock of fast-moving inventory which runs out will not happen.

This stock inventory card is made for ProQ based on the actual conditions of ProQ where there is no special employee of the inventory/partman. Therefore, with the limitations of existing human resources, it is to avoid the occurrence of out of stock causing operational obstacles and services to customers from ProQ workshop. Therefore, with the cooperation of all parties concerned, it is also expected to discipline to fill out this stock inventory card.

E. Implementation of Recommendations

The coach along with the owner have discussed about one of the mechanics to back up in this inventory section. However, there is no mechanic who is willing to back up in this position because it is not a job description of a mechanic. Therefore, at the end of the business coaching activity, this position for ProQ inventory section is still missing.

For FSN Classification, there are eight items of spare parts included in the fast-moving inventory category 1, namely cabin, dryer, silica, freon, compressor oil, engine oil, oil filter and air filter. There are four items of spare parts included in the fast-moving inventory 2 category, namely, expansion, magnetic clusters, motor blowers, and evaporators. There are five items of spare parts included in the category of slow-moving inventory, namely compressors, extra fans, radiator caps, and fuel filters. And there is one item of spare parts included in the category of non-moving inventory from the ProQ workshop, i.e. the cooling unit. The coach along with the head of the workshop and accompanied by a mechanic conducted random sampling activities on Tuesday, May 15th 2018 for eight types of fast-moving category 1 parts from the classification results of fast, slow, and non-moving inventory.

The stock per item card created in the business coaching activity in the ProQ workshop focuses on fast-moving inventory. Therefore, recording can be done more specifically and in detail that helps organize inventory control activities. This stock card is an early warning tool to reorder spare parts when

items on the stock card has reached the specified stock level limit.

VI. Conclusion

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