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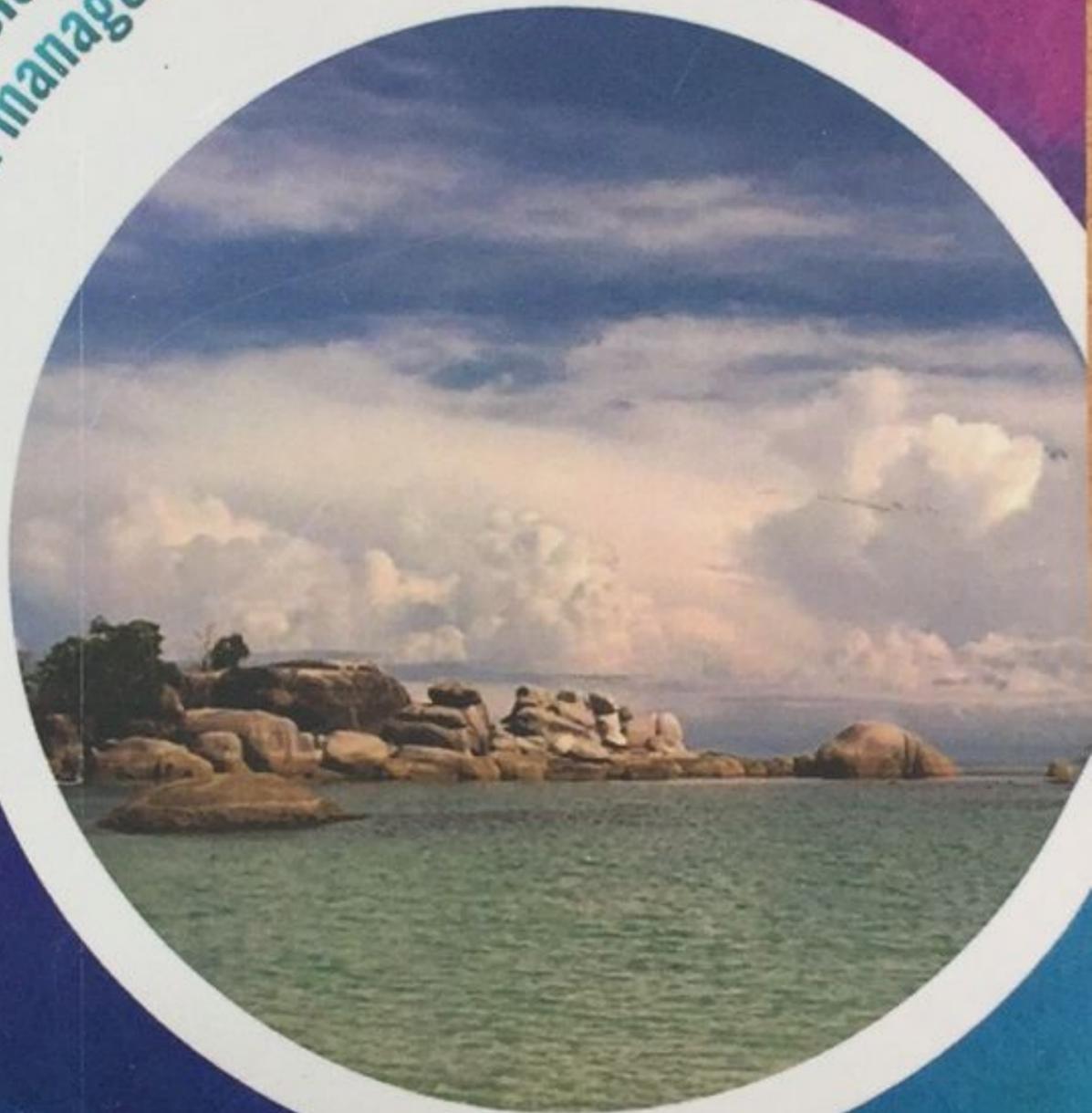
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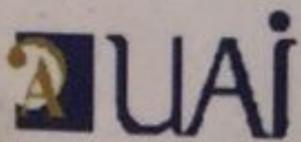
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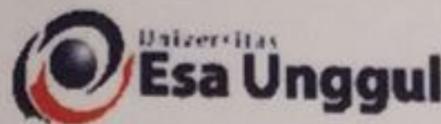
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The importance of production standard operating procedure in a family business company

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Abstract. Plastic industry is a growing sector, therefore UD X which engage in this business has a great potential to grow as well. The problem faced by this family business company is that no standard operating procedure is used and it lead to problem in the quality and quantity produced. This research is aim to create a production standard operating procedure for UD X. Semi-structure interview is used to gather information from respondent to help writer create the SOP. There are four SOP's created, namely: classifying SOP, sorting SOP, milling SOP and packing SOP. Having SOP will improve the effectiveness of production because employees already know how to work in each stages of production process.

Keywords: family business, SOP, plastic industry

1. Introduction

1.1 Background of the study

Plastic is a product that we use everyday. In addition, because of its strong, lightweight, flexible, rustproof and not easily broken characteristic make plastic often used in the society. Plastic started to be used as daily appliances. In addition to being supported by the food and beverage industry, demand also comes from other sectors such as infrastructure, automotive and agriculture. Due to this, the prospect of plastic market in the future is bright and very promising to run.

The author used UD X as the object of research which is a business engaged in plastic manufacturing. UD X is a family business company located in Ambon, engaged in manufacturing related to the processing, milling and production of plastic waste. Starting from the process of sorting raw materials received in accordance with its type, then discarding parts that are not used (such as labels on plastic bottles, or separating the neck & close lid of the bottle because it is a different materials from plastic bottle). Before the milling, weighing will be done in advance to know the production capacity of each employee and as a proof of their memorandum to receive payment. The next process is the milling and washing, then it is packed into a sack and arranged.

The problem faced is the fluctuating quantity of production whereas the amount of raw materials entering the production warehouse is stable. Other than that, because the majority of the production process that occurs is done by human hands, sometimes the quality produced do not have the quality control or the right standard because the assessment of each person is different.

Quality Control is very important and required by a manufacturing company to stabilize the quality of the products they have or produce. As a manufacturing company, it is very important for UD X to keep the quality of the products sold and to stabilize the quantity of production. The need to have



knowledge about the proper production system will drive the company towards business success and can later be used as a working standard within the company. Ekotama [1] mention that a business that has a good system is very easy to develop. It also states that business that has a system is always able to produce good quality and consistent so it becomes more competitive to win the competition when compared to other businesses that do not have a system. Tambunan [2] states that the system is a combination of interconnected elements on a regular basis to achieve certain objectives agreed by all parts of the system so that if one part of the system is gone, it will have an impact on the decline in performance and can not be called as one system.

Prior to this research, UD X did not have a production SOP and for the future, testing and necessary data collection will be done to make production SOP. According to Tambunan [2], Standard Operating Procedure (SOP) is basically a guide that contains standard operating procedures that exist within a company that is used to ensure that all work processes are carried out effectively, efficiently, consistently, standardized and systematic. SOP is closely related with manufacturing companies, because without a good and proper SOP, manufacturing companies will not be able to grow, compete and minimize fraud that may occur internally and externally. It shows that SOP is very important for the company.

Due to it, it is important to make SOP for UD X which will be used as a reference in the future so that employees will not have difficulties in carrying out the production process. Another impact of the making of SOP is to facilitate the company to monitor the quality of output, because by using SOP as a work guide of course the employees will work with production process steps that are always almost the same as the guide (SOP) provided so it will be easy to control the quality of output produced. No less important is to have a company SOP to save time and cost, it is said to save time because employees do not need to be confused or hesitant in doing their work because they already have a guide. And cost-effective because training every time there are new employees who joined into the company is not necessary. This research was conducted in order to know the proper production system for UD X and entitled "The Importance of Production Standard Operating Procedure in a Family Business Company"

1.2 Literature review

Based on Murtie [3], production is any activity in creating and adding the usefulness of an item that requires production factors, and production management is the overall management of that production activities. Fahmi [4] states that production management is a science that discusses comprehensively how the company's production management using the knowledge and art that can manage people to achieve a desired production result. The production function is to conduct the activity of converting and managing the production resources into a product, Haming and Nurnajamuddin [5].

According to Ekotama [1], SOP is a system designed to facilitate, tidy up and discipline work. This system is a sequence of work process from start to finish with details so that people who read it can clearly understand its meaning and purpose. SOP that originate from techniques, steps and activities that enable a job to be done well in the past, is expected to help for the moment so as to facilitate someone (both old and new people) to carry out their work if the steps or activities were written or documented as SOP, Thompson and Tracy [6]. There are several stages in the making of SOP, starting from the establishment of a SOP special team, support provided from the organization to this matter, making the plan of team task allocation, and determine the target. Finding and processing the necessary information and identifying existing alternatives to solve them. Analyze and choose the best alternative. Write SOP, review and apply SOP to be tested, rated, evaluated and implemented.

According to Kotler and Armstrong in Codita [7] quality is the ability of a product to meet consumer expectations and reach the level of customer satisfaction. According to Kotler and Armstrong in Horner and Swarbrooke [8] the product is something that can be offered / marketed to attract attention, takeover or consumption that may satisfy the wants or needs. It includes objects, people, services, places, organizations, and ideas. Product quality is a set of specifications that are professionally arranged and recognized by the society. It can be assessed from the features of the product, the sequence of a series

of production processes, and a re-check by the producers who know the correct stages. Kloplic, Kuipers and Hocquette [9].

It is important to control the products produced by the company because the products with unstable quality will certainly make the consumers think twice to keep buying the products being offered. According Sunarya [10], to assess a product whether it is in accordance with the requirement / standard is to conduct quality inspection with product testing. This is where the important role of Quality Control can be seen. Quality Control is the proof that the production process can be done and operated well, without doing the inspection [11].

2. Method

The object of research is UD X located in Ambon, while the subject of research is informants who provide information about the situation and have a lot of experience in the plastic industry that are:

1. Two people from outsider who work in manufacturing companies that have a proper production system or have SOP.
2. One person from the company that is the owner (CEO) of UD X, so that he can assist in the formulation and preparation of SOP that will be done.
3. One consultant who has experience in plastic segment and production.

The author used purposive sampling technique in selecting samples. Purposive sampling is chosen because the sampling is based on certain considerations [12]. In this research, the observation method is done by visiting the manufacturing companies, studying the running production SOP [13]. Observation is chosen to know first-hand the operational activities starting from the production procedure of a product to the quality inspection to achieve quality standardized by the company [12]. Observation is done at the production site, after which internal observation is conducted to collect production data. For the interview, method used is semi structure interview. Semi structure Interview is a conversation directed to dig a predetermined topic that will aim to deepen the information obtained from the parties being interviewed. This is done to explore the issues deeper from the sample [12]. Especially for those who run the manual production SOP and understand how to maintain the consistency of quality and quantity of its products. Interview is conducted to get information about SOP that can be used as a reference for this research. Data from observation and interview is collected into one (photos, writings, or observations) from informants to be made into event records [12]. Member check is used to check the validity and reliability. Therefore, this research is mostly relied on expert opinion.

3. Result and Discussion

The production process starts from the moment the goods are derived from the L300 car and distributed to each worker according to the division of the type of plastic that has been done. After being distributed, the workers will do the process of classifying and sorting before the raw materials are deemed ready to be grinded.

Classifying means that the raw materials that come are mixed in one kind of sack and will be sorted according to its type. And then sorting is the process after the materials are done being classified, so the raw materials will be processed again, separated by type and color. After that, for some types of plastic, the cleaning the labels, stickers, or parts that still become one part but not a plastic type will be done. In addition, the sorting process also includes cutting up the plastic parts to be smaller if it cannot go directly into the head / mouth of the milling machine. After going through the process of sorting the raw material is said to be ready to be milled.

Goods are weighed first before being transported up near the mouth / head of the milling machine. After that there is one person who is tasked to spill the materials into the milling machine. Soap and caustic soda are inserted into the funnel to become one with a water spray, then the result of the grill will come out below in the first basin. There are two people on duty below, each in the first and second basin. The result of the first basin will be washed, filtered and then moved to the second basin or rinse basin with a basket in order for the result of the mill to be cleaner, then from the second basin will be

washed, lifted, filtered and transferred into the sack. After the filled sack is full, it will be stitched with needle and raffia rope to not be spilled when being moved. After stitching, it will be arranged / stacked until all the same kind of mills are milled or at least the mills above is done, the purpose of this is for the water located in the sack to be drained. Then it will be weighed and moved to the drying place as well as the accumulation of ready-to-sell production materials.

For the drying process using the sun only takes one to two days depending on weather factors. The results can be said to be of high quality for the color categories as long as the production result is clean and has no dirt that sticks to it like soil, sand, glue, etc. Then for the white or transparent category, it is the same with the color categories but with the addition that the white color or transparent do not fade. To maintain the quality, the company checks on the milling process, so when it comes to the second basin of the mill and it is still not clean it will be added more soap and be milled again. Based on the interviews and observations obtained from both research subjects, their company already has SOP, but the SOP is a simple SOP from both mills factory. In addition, the production process of both companies is the same and still being done until now.

In addition to benchmarking on the production flow of two similar companies, from interviews with consultants it is found that the early stages of the production process when raw materials come is the same which is seen the goods first, classified what is necessary and what does not need to be, means that if the type of plastic is already the same it will continue directly to sorting. From the production stages that the company has and the results from interview with consultants, it provide data information that will be analyzed so that it is appropriate to be applied to UD X, and later be useful and important for the author to use in preparing / making of production SOP as a clear reference. So that later in preparing / making of SOP is not confusing for workers / others who read it.

In accordance with the interview quote that at the beginning, the raw material entry is an important / crucial stage in determining whether the goods will be good or not at the end. All respondents both internal, external and consultant also said that in the making of SOP, the classifying and sorting stage should not be missed / underestimated because it will has fatal consequences. Then there is also quote from the internal interview because it is so different than the two external companies. It is said differently because the owner of UD. X performs different actions in responding if the goods from suppliers received are already very dirty so that it will affect the quality if it is continued to the production process. Here the author finds striking differences, the striking difference between the three companies running plastic mills, the two companies said the same statements, but it is different compared to statements by internal company owners. Both external companies will still grind and sell because it is already being grinded, also because it is already used time and production costs while running. While from the internal version, instead it will be stopped as early as possible from the beginning, to maintain the quality and for the prices to remain high. UD X also does not choose to keep grinding because it feels like a loss, because it has been purchased with normal price, employees who process of course also paid normally while the output is not worth the normal price. Then it would be very detrimental to continue.

It is important to control the products produced by the company because the products with unstable quality will certainly make consumers think twice to keep buying the products offered. According to Sunarya [12], to assess a product whether it is in accordance with requirement / standard is to conduct quality inspection by product testing. This is where the important role of Quality Control can be seen. Quality Control is the proof that the production process can be done and operated well, without doing the inspection [11]. By having standardized products, it will be easier to compete in the market because buyers are not confused with non-standard products (whether of appearance, color, quality, weight). After the observation and interview it was found that the inspection / quality control is done every time after the goods were rinsed / inserted into the sack. So if the quality is bad it can still be fixed by adding soap and caustic soda. Although if it turns out after being repaired the quality of goods does not change much, at least the company can complain, get discounts, or even decide to stop cooperating with suppliers, depending on the negotiation. Also, from the consultant author found several ways / steps so that the milled product meets the standards desired by the buyer. That is by adding a filter according to the type of plastic to be milled, there are even some types of plastic that should not use a filter at all.

The importance of standardization not only determines the quality of what will come out later, but with the standardization it will ease the work and increase the effectiveness while milling. In addition, the company will have a reference in setting the quality standards of products to be achieved. The same thing constantly repeats in every interview that the process of sorting and classifying will not be eliminated from each stage / flow of production processes that occur, because the process of classifying and sorting is a crucial stage in the production process. And it should really be considered because the output of classifying and sorting will ultimately affect the result output produced by the company. Because when it is mixed in different type or color then the product will get complained and even be returned so it cannot be sold.

From all interviews and data that have been processed, the author will use it to make production SOP (Standard Operating Procedure) for UD X to make it easier to read and understand the intent and purpose of the SOP which has been made. Later there will be 4 kinds of SOP made by the author, which are: classifying SOP, sorting SOP, milling SOP and packing SOP.

3.1. *Classifying SOP*

1. At the moment the new goods come, it should be determined whether it is necessary to go through the classifying process or not.
2. Classifying process is done by classifying various types of plastic mixed in the sack, classified according to the type of plastic. From raw materials in one sack mixed with plastic, will be separated into several sacks that have been provided according to the type. For example: the type of PP, BLG, PET, GLASS, color mixed at this stage is not a problem.
3. PP is a type of hard plastic, easily broken and rigidly made by printing / pressing, can be in the form of chair or table. BLG is a type of plastic that is printed by blowing (BLOW) so that it has a small mouth and an expanding belly, can be in the form of jars or gallons. PET is a transparent type of plastic, can be clear or in color, made by the same way with BLOWING but the type of plastic is different, can be in the form of drinking bottles. And GLASS is a type of plastic in the form of plastic water glasses.
4. Incorrect type or mixed type is a fatal problem and should be avoided.
5. If the sack where the result of classifying process is full, it is tied with needle and raffia rope so it will not be spilled. Then it is replaced with new sack again. It is collected to be weighed every week before submitted to sorting department and also for the wage payroll for labors.

3.2. *Sorting SOP*

1. Sorting is the stage where the goods already being classified and will be processed to produce raw materials ready to be milled.
2. The result from classifying process or goods that do not need to be classified will go directly to the sorting process.
3. Sorting begins by separating the items that have been classified to be more specific. So that one sack will has the same type and same color of plastic.
4. Wrong type, wrong color, mixed color or mixed type is a fatal mistake and should be avoided.
5. Sorting divided in 3 departments / parts: weight sorting, glass sorting, PET sorting.
6. Sorting heavy items include PP and BLG sorting. This is done is to separate the results of classifying process in accordance with the color to be more detail. For example: black PP and red PP with its own, in this stage, aids tool in the form of a machete is used to cut if the raw material is too big to enter into the milling machine.
7. PET sorting means PET type processing. In this section, the label attached is removed using a cutter because it is considered garbage (cannot be grinded), if it is still has water left, it is emptied first. Then separate the bottle cap from the neck bottle because it belongs to a different type of plastic, then it will be separated into PET 1 and PET 2. What distinguishes PET 1 and PET 2 is PET 1 texture is more flaccid while PET 2 is more rigid, for example: PET 1 includes aqua bottle while for PET 2 is like coca cola.

8. GLASS sorting is almost like processing PET, the difference is glass label is located on the mouth that must be removed using a cutter as well. Other than that sometimes the glass comes with a straw. The straw is not thrown but also grinded because it has the same type of plastic.
9. After it is all collected, it will be collected and then weighed every week. With the purpose for the company's production record and wage payroll for labors.

3.3. Milling SOP

1. After weighing processed sorting, the goods will be lifted close to the head of the milling machine. So it is easy to pour it into the milling machine.
2. One person will be on top to pour the mill raw material and prepare and pour soap and caustic soda.
3. After soap, caustic soda and raw materials are ready, the machine will be turned on. The water pump will spray water for engine circulation. There are two people down near the basin where the grind comes out in the form of pieces of plastic flakes.
4. The two workers job is to scoop, rinse, filter out the plastic flakes that come out in the first basin, then move it to the second basin, to do the same thing. The goal is to clean the results of the mill if it is still dirty, then from the second basin, the workers in charge there will pour the results of clean mill & drained it into a sack. Occasionally hitting it to the ground so that the sack is more filled and has more space to be filled.
5. While inserting the milled product into the sack, it should be noted that no other items / goods are brought along like dirt and TUS process needs to be done or draining the water from the basin so that it does not affect the quality that will be judged by the buyer.

3.4. Packing SOP

1. After the sack is filled to full capacity then the workers whose in charge in the second basin are tasked to tie the mouth of the sack, so that if it is later be moved or weighed it will not be spilled.
2. Collected and later the milled sacks will be weighed and recorded every week to monitor weekly production results whether it is increased or decreased, and also to pay the wages of milled production workers.
3. After weighing the results of production will be arranged in a predetermined place, exposed to sunlight to dry, so that the sale price is not discounted because the product is wet (contains water).

4. Conclusion

This study aims to make SOP (standard operating procedure) for UD X. The importance of having SOP is in addition to help in explaining job descriptions of each employee, SOP also improve the effectiveness of production because employees already know how to work in each stages of production process, and also what kind of product is considered as having good quality. The SOP must be detailed so that it can be used as a reference / guide for the reader, so there is no need to always have a PIC all the time in place to supervise the new workers and old workers.

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