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**.Research Article**

## Quality Control In The Printing Process Of PT XYZ Printing Packaging Products

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**Abstract:**

This study aimed to determine the role of quality control in the printing process of packaging products printed by PT XYZ. The reason why quality should be emphasized was because a good quality will encourage the business progress and decrease the defect or damage. This study used descriptive qualitative method. The data collection methods were collected through interview, literature study and direct observation by the writer. PT XYZ had set specifications and quality control procedures, but the results of printing packaging product were still unmatched with the specifications. There were 3 stages of XYZ quality control starting from quality control of incoming raw materials, quality control in the production process, and quality control of finishing. The inspections carried out during the printing process aimed to ensure that the printing results met the standards and specifications set by the company as a proof from the customer. Thus, it could reduce the risk of products that did not meet the printing quality standards which later continued to the next process and sent to the customer.

**Keywords** – Quality Control, Packaging, Manufacture

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**Introduction:**

The quality of products is one of the customer considerations in ordering for the purchase of goods / services. In this case, quality control plays an active role in reducing the risks came up from the production process. Quality control aims to make there are no items that do not match with the quality standards desired by the customer, so that the production process does not produce defective products continuously. Therefore, it takes control, selection, and quality assessment that meets the established standards. Thus, the customers feel satisfied and the company does not suffer losses in the long term. The task of quality control in a printing company such as PT XYZ is to check the incoming raw materials, the production process, and the finishing of the product with the specifications set by the

customer and the capabilities of the company. In quality inspection, there is a reference to assess the quality of the resulting product in accordance with predetermined standards. So that the products produced by the company have quality criteria in accordance with the customer expectations. Garrison (2003) asserted "Control is a process of determining, standard is something which achieved, implementation is something which is done, improvement is an assessing the implementation, so that the implementation which is in accordance with the plan is also in line with the standards". One of the statistical quality controls is using SPC (Statistical Process Control). According to Heizer & Render (2015), Statistical Process Control is a process which is used to monitor the standards by setting the

measurements and corrective actions for a product or service produced. Even though PT XYZ has set specifications and quality control supervision procedures, the result of printing packaging product is still unmatched with the specifications. Also, the production result that do not meet with the established standards will affect the production process. Based on the background described above, the writers are interested to find out the role of quality control in the printing process of PT XYZ printing packaging products.

## 2.2 Packaging Functions:

According to Kotler and Armstrong (2012), "Packaging is a form of activity that involves design and product, so that this packaging can be functioned to protect the products inside". According to Klimchuk and Krasovec (2006), "Packaging is a creative design that relates shape, structure, material, color, image, typography, and design elements with product information so that the product can be marketed". From the definition of the experts above, it can be concluded that the meaning of packaging is a protective wrap that has an attractive design and can protect the products inside, so that the product can be marketed.

The functions of packaging according to Wijayanti (2012) are:

1. Something which can make a product beautiful with a packaging that was suitable with the product category.
2. Providing product safety to prevent the product from damaged when it displayed in the store.
3. Providing product safety during the product distribution process.
4. Giving information to consumers about the product itself in the labeling form.

## 2.3 Quality Control Process

According to Mockler (1972), the quality control process could be sorted into the following steps:

### 1. Determining Goals

The main goal is to produce a product with a constraint predetermined budget, schedule and quality. These targets are generated from a basic planning and become one of the main consideration factors in making decisions to carry out the production process, so that these

## 2. Literature Review

### 2.1 Quality

According to Heizer and Render (2008), quality is "the overall form and characteristic of a good or service that shows obvious or hidden utility". According to Sunyoto (2012), quality can be defined as "a measure to assess a good or service as having an intended use value or in other words a product or service is deemed to have quality if it is functioned or has a use value as desired".

targets become the objectives of control activities.

### 2. Scope of Activities

To clarify the objectives, the product needs to be further defined regarding the size, limit, and the type of work that must be done to complete the whole product.

### 3. Standards and Criteria

In an effort to achieve goals effectively and efficiently, it is necessary to formulate standards, criteria, and specifications that are used as benchmarks for comparing and analyzing jobs. The chosen and defined standards, criteria and specifications must be quantitative, as well as the measurement and calculation methods must be able to provide an indication of the target achievement, such as:

- a. In the form of a schedule, for example the specified time to reach the deadline.
- b. In the form of work units that can be completed.
- c. In the form of quality standards, criteria and specifications, for example those related to printing quality.

### 4. Designing Information Systems

One thing that needs to be emphasized in the quality control process is an information system and data collection which is able to provide quick, precise, and accurate information. The information system must be able to process the collected data into a form of information that can be used for decision making.

A report, inspection, measurement, data collection, and work result information is held at the end of the specified time. In order to obtain a realistic picture, the report should be based on the measurement of physical work completion.

### 5. Reviewing and analyzing the work results

In this step, an analysis of the obtained indicators is carried out and tried to compare them with the specified criteria and standards. These analysis results are important because they are used as the basis for corrective action. Therefore, the method used must be precise and sensitive to possible deviations that occur during the production process.

#### 6. Taking Corrective Action

If the analysis results show an indication of deviations that are quite influential, it is necessary to take corrective steps. The analysis results and corrections will be useful as feedback for work planning that strives to achieve the initial target.

### 3. Methods

The data collection methods were gained through interview, literature study and direct observation of the writers.

5. By using the interview method, the writers proposed to the staff and manager of the QC inprocess about the procedures and standards of quality, as well as food safety of packaging printing process carried out by PT XYZ. Literature study of this final project was done by reading, taking notes, and studying the relevant literature with the object under study. The observation method was carried out by making direct observations on the implementation of quality control in the printing process at PT XYZ.

### 4. Results and Discussion

#### 4.1 Quality Control Procedure of PT Pura Barutama Unit Offset

Quality Control at PT XYZ was divided into three parts:

##### Incoming Quality Control

- Checking the quality of the raw materials sent by the supplier, ranging from paper, ink, opp, pet, glue, chemical, flute, box.
- Making a decision to accept or reject the raw materials sent by the supplier.
- Maintaining the quality of raw materials to be used for the production process, in order to get quality output that met predetermined standards.

##### In Process Quality Control

- Overseeing the production process from beginning to finishing, from printing to folding and gluing (folding process).
- Providing a decision whether a production process could continue to the next stage or not.
- Finding and looking for product defects and separating them during the production process.
- Making reports on quality and food safety inspection as well as the deviations that occur during the production process.

##### Finishing Quality Control

- Overseeing the process of folding, sorting and packaging of the product.
- Separating good and reject products if a product was found that did not meet the predetermined standards.
- Making a report on the feasibility of sorted products for the decision whether the goods are appropriate to be delivered to the customer or not.

#### 4.2 Types Of Paper Used In The Printing Process:

PT XYZ has several types of paper that are tailored to the customer request to be used in the process of printing products as the customer order proofs. Quality standards and paper checks for the printing process are the initial determinants of the product quality if the paper used in the printing process is in a good quality too. PT XYZ checked the paper raw material PT XYZ in the laboratory, where the tools needed to check the paper standard specifications are available. For instance, checking the paper weight used an electronic scale tool, and checking the paper thickness used the Vernier Caliper so that the checking results are in accordance with the standards set by PT XYZ. Then, the decision to accept the raw paper material from the supplier or make a complaint and return the paper raw material to the customer is determined according to the checking results.

The paper raw materials used by PT XYZ already have FSC & PEFC and ISO FSSC 22,000 certification, which means that the raw materials used are legal and the forest conservation are sustainable and the product packaging are safe to be used.

#### 4.3 Types Of Ink Used In The Printing Process

In the printing process, PT Pura XYZ used several types of inks that are tailored to customer requests according to predetermined standards quality, in order to get a printing color that matched with the desire of the customer. The ink used in the printing process had a basic color, namely CMYK (Cyan, Magenta, Yellow, and Black) and a special color according to customer requests.

PT XYZ printing company only divided the types of ink based on the color, so that there are only CMYK base colors and special colors from the customer. The company had established ink quality standards with several criteria that were used as references in the quality control of ink raw materials for the printing process.

#### 4.4 The Role of Inspection in Quality Control Printing Process:

Inspection is one of essential elements in quality control. Inspection is needed to ensure that the quality of a resulted product is in accordance with predetermined standards and specifications, so that there will be customer satisfaction for the resulted product. In addition to controlling quality, inspection can also reduce production costs due to poor quality of products such as customer returns, rework costs in large quantities, and disposal costs of products that do not comply with predetermined standards and specifications.

Inspection plays a role in controlling quality in the production process, especially in the printing

packaging process where PT Pura Barutama produces food, medicinal, or other product packaging, so that in production, a strict inspection is required to get a good output and according to predetermined standards. Inspection basically only measures the level of conformity with the specified standards and product characteristics, and separates products that do not comply with the established quality standards. So basically, the inspection will not conduct research on why the product is not in accordance with predetermined standards.

#### 4.5 Quality Control Procedure in the Printing Process

**Table 1. Quality Control Procedure in the Printing**

No.	Activities	Standards	Tools	Output Documents
1	Taking the Job/PP including its completeness (CR, examples/sheet, technical drawing) and check the completeness	PP, CR, examples and technical drawing	-	Quality inspection data in the printing process
2	Taking the printed sample, inspecting the design and the text	Acc Proof Print/CR, Technical Drawing	Lup	Quality inspection data in the printing process
3	The printed results were inspected to see the register whether the print has miss register or not (the sampling was done in every 20 minutes)	ACC Proof Print	Lup	Quality inspection data in the printing process
4	The printing results were inspected including: - Color correctness - Color thickness/thinness - Color evenness - Printing fineness - Color shading - Text - Barcode - Physical (foreign matter, smell, dirt, wet) the sampling was done in every 20 minutes	PP, CR	Lup, Barcode Reader	Quality inspection data in the printing process
5	Making a quality deviation report if there were found some quality deviation during the process, then discussed it with the production department	-	-	Quality deviation and food safety form
6	Documenting/archiving the quality inspection data in the printing process	-	Ring Binder	Quality inspection data in the printing process

## 5. Conclusion

Based on the analysis and discussion results of the Role of Quality Control in the Printing Process on PT XYZ's Packaging Products, it can be concluded that there were 3 stages of quality control in PT XYZ, starting from quality control of incoming raw materials, quality control in the production process, and finishing quality control. Inspections carried out during the printing process were aimed to ensure the printing results met the standards and specifications set by the company as a proof from the customer. Thus, it could reduce the risk of products that did not meet the printing quality standards which later continued to the next process and sent to the customer.

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