International Journal of Multidisciplinary Research and Publications
ISSN (Online): 2581-6187

An Analysis of Production Cost by Using Activity Based Costing Method as Selling Price Determination at PT STO Samarinda

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Abstract— *This study aims to determine and analyze the comparison of the method of calculation of the production cost activity based costing system with the conventional system as a determination of the selling price at PT STO Samarinda from October 2020 to September 2021. The data of this study were collected using the observation method, interview, documentation, and literature study. This research method is descriptive quantitative research with activity based costing system. The results of this study indicate that the activity based costing system when compared with the conventional system gives a higher cost of production for the Mix Meranti Solid Laminated Broad product. Meanwhile, the cost of production was lower for the Mix Meranti Finger Joint Laminated Board, Mix Meranti E2E, Mix Meranti E4E, and Mix Bangkirai E4E with an activity based costing system. The difference that occurs is due to the imposition of factory overhead costs on each product.*

Keywords— *Cost of production, conventional system, activity based costing.*

I. INTRODUCTION

The main goal of a company, be it a service company, a trading company or a manufacturing company, is to seek maximum profit. The company's goals can occur if every cost incurred by the company is properly controlled in every detail of the company. However, it is unavoidable that the profit generated comes from the sale of the company. Therefore, the selling price is very important for companies to be able to survive in conditions of very rapid business competition. Companies must calculate the selling price accurately.

The selling price cannot be too low or too high. It should not be too low to cover all the costs charged by the company and to provide the expected profit. The selling price should also not be too high for the company to compete with its competitors, because if the selling price of a product is set too high it will result in a decrease in consumer interest in buying the product. The strategy of setting the wrong selling price for a product can lead to problems in the future that the company may not be able to solve.

The selling price of the product is the result of calculating the cost of production [1]. Thus, setting a good cost of production will produce the right selling price. Determining the right cost of production for a product will be able to reduce uncertainty in determining the selling price. Calculations in determining the cost of production must be carried out in accordance with consumption, this is done as a basis for making decisions for determining product prices. The determination of the cost of production can be done based on a conventional cost accounting system or using an activity-based costing system.

Activity based costing system (ABC) is a refinement of the existing conventional system. Activity based costing system is a costing method that allows a more accurate and relevant allocation of factory overhead costs. In this method, indirect costs are grouped according to their respective activities, then each cost pool is associated with each activity and allocated based on the activities in each of these cost pools. Activity based costing system uses a type of cost driver that is more accurate so that it can accurately measure the resources that will be used by the product.

Based on the description that has been explained, it can be seen the importance of using an activity based costing system in calculating the cost of production, especially in manufacturing companies to be superior to conventional systems. The author is interested in conducting research at PT STO Samarinda, a company that processes logs raw materials to produce molding wood products or sawmill wood. The author is interested in studying further by conducting research on the analysis of the cost of production using the activity based costing method as the determination of the selling price at PT STO Samarinda.

II. LITERATURE REVIEW

Cost Accounting

Accounting concepts and procedures to measure the costs of carrying out various business and production activities are called cost accounting [2]. The most widely used financial accounting data in management accounting is mainly related to cost data that is processed in a single cost accounting system. Cost accounting is part of management accounting and part of financial accounting to a certain extent, where cost accounting can meet the needs of external reporting.

Cost of Goods Sold

The cost of production is a value sacrificed and measured in units of money to obtain assets that are offset by reduced assets or increased debt/capital in a company [3]. The cost of production is the cost of production of products that have been completed and sent to the finished goods warehouse and

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recorded as finished inventory [4]. If the product has not been produced, it will be recorded as work in progress inventory.

Activity Based Costing

Activity-based costing system is an activity-based costing information system designed to motivate personnel to reduce costs in the long term through activity management [5]. The activity based costing system is designed with the basic belief that costs can only be significantly reduced through the management of the causes of costs, namely activities.

Cost Driver and Cost Pool

The cost drivers are called activity drivers [5]. An activity driver is something that causes the consumption of activity by a product or service. Activity drivers are the basis used to assign activity costs to products or services that utilize these activities. While the activity cost pool is a grouping of all cost elements related to an activity [6].

Conventional System

Conventional systems can also be called traditional methods. According to Mursyidi [7], the calculation of the cost of conventional or traditional products is where factory overhead costs using tariffs are determined in advance based on a plant-wide system and departmentalization. Meanwhile, Blocher et al [8] state that the conventional cost system is a system for determining the cost of production by measuring the resources consumed in proportion to the number of products produced in the production process.

Selling Price

The definition of price according to Kolter & Armstrong [9] in a narrow sense is the amount charged for a product or service. In a broad sense, it is the sum of all the values that customers provide to benefit from having or using a product or service. Price is the only element in the marketing mix that generates revenue, all other elements represent costs. Price is also one of the most flexible elements of the marketing mix.

III. Research Method

The data analysis technique used is descriptive quantitative research with activity based costing system. Quantitative descriptive research is research that is used to explain, describe, or summarize various conditions, situations, phenomena, or various research variables according to events that can be photographed, interviewed, and observed. expressed through documentary material. The data analysis technique that the author uses is as follows:

1. Initial identification of the method of calculating the cost of production used at PT STO Samarinda
2. Calculating production costs using conventional systems
3. Calculating the cost of production using an activity-based costing system
4. Compile the calculation of the cost of production according to the activity-based costing system
5. Comparing the results of the calculation of the cost of production calculated based on the conventional system with the cost of production calculated based on the activity-based cost system, then calculate the difference.

IV. Research Result

Comparison of the cost of production of conventional systems with activity based costing systems can be presented in the Table I.

TABLE I. Comparison Cost of Production

Types of Products	Conventional System (IDR)	ABC System (IDR)	Difference (IDR)	Condition Value
Mix Meranti Solid *Laminated Broad*	4,996,129	5,092,289	(96,160)	*Undercost*
Mix Meranti *Finger Joint Laminated Broad*	4,827,431	4,613,991	213,440	*Overcost*
Mix Meranti E2E	4,682,197	4,532,591	149,606	*Overcost*
Mix Meranti E4E	4,970,191	4,950,129	20,062	*Overcost*
Mix Bingkarai E4E	5,073,096	5,003,303	69,793	*Overcost*

Data source: processed from PT STO Samarinda

The difference between the cost of production based on the conventional system and the activity based costing system is caused by the imposition of factory overhead costs on each product. In the conventional system, factory overhead costs for each product are only charged to one cost driver, namely the total production volume (m^3). As a result, there is a distortion in the imposition of factory overhead costs. In the activity based costing system, factory overhead costs for each product are charged to several cost drivers so that the activity based costing system can allocate activity costs to each product appropriately based on the consumption of each activity. The activity based costing system divides the consumption of factory overhead costs into four activity levels and the conventional system only divides the factory overhead costs into product volume (m^3), so that the activity based costing system calculates the consumption of activity resources for factory overhead costs much more clearly and accurately.

Costing with conventional systems can lead to distortions or errors in inventory measurement, inappropriate product line decisions, unrealistic selling prices, ineffective resource allocation, wrong strategic focus, incorrect identification of critical success factors, and loss of competitive advantage.

Determination of the selling price with the cost of production using an activity based costing system produces a lower selling price when compared to the conventional system, except for the Mix Meranti Solid Laminated Broad product, which results in a higher selling price when compared to the conventional system. Determination of the selling price for the activity based costing system is smaller for the Mix Meranti Finger Laminated Broad, Mix Meranti E2E Mix Meranti E4E, and Mix Bingkarai E4E because it costs a smaller cost of goods so that the selling price offered is smaller. Meanwhile, the determination of the selling price with the cost of production based on the activity based costing system on the Mix Meranti Solid Laminated Broad product

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resulted in a higher selling price because the cost of the cost incurred was greater.

TABLE II. Selling Price Determination

Types of Products	Expected Profit	Cost of Goods Sold		Selling Price	
		Conventional System (IDR)	ABC System (IDR)	Conventional System (IDR)	ABC System (IDR)
Mix Meranti Solid *Laminated Broad*	24%	4,996,129	5,092,289	6,195,200	6,314,438
Mix Meranti *Finger Joint Laminated Broad*	24%	4,827,431	4,613,991	5,986,014	5,721,349
Mix Meranti E2E	24%	4,682,197	4,532,591	5,805,924	5,620,413
Mix Meranti E4E	24%	4,970,191	4,950,129	6,163,037	6,138,160
Mix Bingkarai E4E	24%	5,073,096	5,003,303	6,290,639	6,204,096

Data source: processed from PT STO Samarinda

Observing the results of the calculations and the results of the analysis that has been carried out by the author for the cost of production, according to the author, it is better to calculate the cost of production by using an activity based costing system because the calculated factory overhead costs are clearer and more detailed for each activity carried out during production activities. Activity based costing system can help companies to reduce cost distortion caused by the conventional system. Activity based costing system can be used to assist decision making within the company. Determination of the selling price that has been through an activity based costing system will result in a better price so that it can compete with other similar products.

V. CONCLUSION

The calculation of the cost of production at PT STO Samarinda uses a conventional system. The conventional system charges factory overhead costs using a single rate based on the total production volume (m^3), namely the total factory overhead costs divided by the total production volume (m^3).

The calculation of the cost of production at PT STO Samarinda with an activity based costing system is carried out in two stages. Factory overhead costs are determined based on the cost driver and cost driver rates used.

The difference between the cost of production based on the conventional system and the activity based costing system is caused by the imposition of factory overhead costs on each product. In the conventional system, factory overhead costs for each product are only charged to one cost driver. As a result, there is a distortion in the imposition of factory overhead costs. In the activity based costing system, factory overhead costs for each product are charged to several cost drivers so that the activity based costing system can allocate activity costs to each product appropriately based on the consumption of each activity.

The cost of production at PT STO Samarinda with the activity based costing system shows results that are relatively larger than the cost of production with the conventional system. However, PT STO Samarinda should re-evaluate its costing system in determining the cost of production because the cost of production will affect the product's position in the market.

PT STO Samarinda can still use the conventional system if the cost of production does not exceed the price of other companies, so that it can compete with market prices. If PT STO Samarinda produces more varied products, PT STO Samarinda can adopt an activity based costing system but must really be able to assist the management in making decisions.

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