APPLICATION OF FISHBONE DIAGRAM IN USING ROOT CAUSE ANALYSIS (RCA) FOR DEVELOPING OF REVENUE AND EXPENDITURE SYSTEM IN MANUFACTURING COMPANY

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Abstract

This study aims to identify the root problems in developing income and expenditure systems in the PT ABC. This research uses qualitative methods with the Root Cause Analysis approach. The issues that arise in the company will be analyzed using the Fishbone Diagram. The result of this study explains that some problems occur in the company. The procedures, business processes, income, and expenditure in the enterprise are still done manually, so it takes a long time to analyze the factors of Man (user), Material (material/supporting documents), Machine (tools used), and Method (procedures/systems running). Based on the result of this study, PT ABC should have a website that can be used to process the cycle of income and expenses in real time. In this case, website design will be carried out to make it easier for companies to archive, create supporting documents, and report income and expenses. This finding will help PT ABC strengthen its internal control and increase the effectiveness of the company's business process. The difference between this research and previous research is that it uses a fishbone diagram approach to dig into the roots of problems that occur in companies. In the last research, no one had used a rooting approach and focused only on system development, so the issues that occurred needed to be described in detail. The limitation of this research is its focus on the root cause analysis of the revenue and expenditure cycle in manufacturing companies.

Keywords: Root Cause Analysis, Fishbone Diagram, Revenue Cycle, Expenditure Cycle

INTRODUCTION

Accounting information systems are closely related to the company's operational activities, such as operating the company manually or computerized. Information systems in companies help achieve organizational goals by controlling and organizing the activities of various systems and sub-systems (Melinda, 2018). Thus, the accounting information system is closely related to the company's operational activities. Through its application, a company can give employees responsibilities based on each employee's abilities so that a series of business activities can proceed to get maximum benefits. The company's business cycle in accounting information systems is grouped into the revenue cycle, expenditure cycle, production and conversion cycle, human resource cycle, and financing cycle (Romney & Steinbart, 2016). According to Nur Azizah (2022), the cash income and expenditure cycle is the central part of the company's activities based on the perspective of accounting information systems. The income and expenditure cycle becomes a cycle that can describe the performance of the other three cycles. Both cycles show the inventory turnover, daily sales, and purchase activities, payroll mechanisms, expense expenditures, and company financial statements.

PT. ABC is a manufacturing company that focuses on information technology by providing computer programming activities, installation, and educational equipment. PT ABC is a B2B company, and business process revenue is received from sales to other companies. The business process

expenditure on the company is in the form of purchasing raw materials and operating costs. PT ABC uses GNU Cash and Microsoft Excel to report the company's accounting statements.

Research by Hamidy (2016) applies fishbone diagram analysis and concludes the problem in the object studied. Namely, the application of e-Cooperatives requires user readiness by the cooperative business entity. Widnyana (2022) also used the same approach and concluded that some problems are caused by electrical disturbances due to the cable connection process, not according to SOPs. Rahmawati et al. (2016) explained the benefit of using the Root Cause Analysis approach is to identify and categorize problems that cause something to happen to an event.

This study uses a Root Cause Analysis (RCA) approach to analyze the root of the problem. This study maps the problems that occur in companies in the income and expenditure business process. RCA is used to identify the "root cause" of a problem or event and carry out a design process to respond to it. In this study, the tool used for RCA is the Fishbone Diagram, which illustrates the categorization of the cause of a problem and finds out the root cause of the problem. The difference between this research and previous research is the fishbone diagram approach to exploring the root of problems that occur in the company. In previous studies, no one has used the root cause approach and only focused on system development, so the problems that occurred needed to be explained in detail.

LITERATURE REVIEW

Revenue Cycle

The revenue cycle is an income procedure that starts from the sales of credit authorization, collection of goods, receipt of goods, and collection to receipt of cash. Income is the gross inflow of economic benefits arising from the normal activities of the entity during a period if such inflows result in an increase in equity that does not come from investment contributions (Donald & Kieso, 2017). Putri et al. (2023) explained that the revenue cycle accounting information system is a series of business activities and related accounting processing that takes place by providing goods and services to customers and collecting cash as payment from these sales. From some of the statements above in previous studies, the revenue cycle is a series of business activities carried out repeatedly to provide goods and services to customers and collect or collect cash for the sale of these goods and services. According to Romney and Steinbart (2016), the revenue cycle is a continuous set of business activities and related information processing operations by providing goods and services to customers and receiving cash as payment for those sales.

Primary Activities of the Revenue Cycle

The main goal of the revenue cycle is to provide the right product in the right place at the right time for the right price. There are 4 (four) basic activities in the revenue cycle as follows:

1. Sales order entry. The revenue cycle begins with taking orders from customers. The sales department, which reports to the vice president of marketing, usually runs the sales order entry process. However, with the increase, customers enter data through forms in a storefront of a company's website.

2. Delivery. The second essential activity in the revenue cycle is filling customer orders and delivering the requested goods. This process consists of two steps: selecting and packing the Order and sending the Order.

3. Billing. The third essential activity of the revenue cycle involves billing customers. This activity involves two separate but closely related tasks: collecting invoices and updating receivables, executed by two separate units within the accounting department.

4. Cash receipts. The final step in the revenue cycle is the acceptance and processing of payments from customers.

Expenditure cycle

An expenditure cycle accounting information system is a series of activities that use data and information about the expenditure cycle, such as cash expenditures for both operational and non-operational and purchasing activities of an item used as an investment for the company (Romney & Steinbart, 2015). According to Fauzi et al. (2021), The expenditure cycle accounting information system is a series of business activities and data processing operations related to purchasing and paying for goods and services. It can be concluded from several previous studies that the expenditure cycle accounting information system is a series of business activities and data processing processes related to cash expenditures on the company's operational costs and the purchase of goods or services. The expenditure cycle involves several activities related to the purchase of raw materials and inventory of goods and services. These activities include identifying and documenting all money expenditures, preparing purchase orders, receiving goods shipments, and recording inventory (Lisnawanty, 2019).

Primary Activities of the Expenditure Cycle

Romney Steinbart (2015) explains that there are four business activities to meet the following expenditure cycle objectives:

1. Order goods and services (ordering materials, supplies, and services). This first stage involves determining the details of the goods/services to be purchased and then selecting suppliers/vendors. The procedure for ordering raw materials, equipment, and services uses purchase order documents. This document contains a list of requests for goods or services based on purchase requisition documents to suppliers and when and how the delivery is carried out.

2. We are receiving materials, supplies, and services. The second activity in the expenditure cycle is the receipt and storage of purchased goods/services. The reception department has two primary

responsibilities, namely deciding whether to receive the goods and checking the quantity and quality of the goods.

3. Approval of payment bills from suppliers/vendors (approving supplier invoices). The third activity in the expenditure cycle is to approve sales invoices from suppliers/vendors for payment using voucher package documents containing the date of manufacture, date of payment, and the total amount of goods and services received.

4. Cash disbursement. The last activity of the expenditure cycle is to make cash payments/payments to suppliers/vendors. The cashier is responsible for paying the supplier/vendor. Payment is made when the debt recording function sends invoice bills from suppliers/vendors and other supporting documents to the cashier. Payment to suppliers is made using cash expenditure documents containing the date of payment, the amount to be paid, and the invoice number.

Fishbone Diagram

Fishbone diagrams can organize complex systems, qualitatively analyzing the causes of risk (Luo et al., 2018). According to James et al. (2014), Fishbone diagrams help facilitate discussion of root cause analysis. A fishbone diagram is a graphic technique that shows several causes of a particular event (Coccia, 2020). From some of the above understandings, it can be concluded that fishbone diagrams are a problem-solving approach that uses fish-shaped diagrams to model possible root causes of problems and solve possible solutions. According to Murnawan (2014), some of the benefits of fishbone diagrams are as follows:

1. It helps determine the root cause of the problem.
2. It helps generate ideas to solve problems.
3. Assist in further research or discovery of facts.
4. Define actions that determine how to create the desired results.
5. Discuss the subject entirely and neatly.

The main factors that affect the quality of the fishbone diagram consist of 5M + 1E, namely Machine, man, Method, Material, measurement, and environment (environment) (Murnawan, 2014). These factors help group the root cause types into a category, as shown in Figure 1.
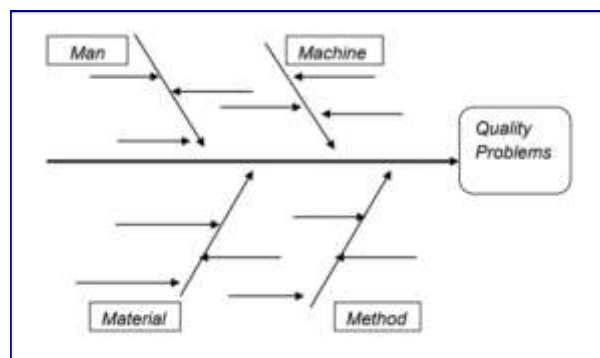
Figure 1. Fishbone Diagram Factors, Munawarman (2014)

METHOD

Root Cause Analysis is usually a qualitative research analysis method that relies on the argumentation and meaning of the phenomenon under study to build empirical, logical, and ethical meaning constructions based on argumentation and meaning of the phenomenon, and this is done by using descriptions to form a comprehensive understanding. Fishbone analysis is a structured approach that allows for more detailed analysis to identify the sources of problems, non-conformities, and existing gaps (Hamidy, 2016). This research stage was developed from research by Hamidy (2016) and Widnyana (2022). The steps to take are 1) Data collection, 2) Illustrate a causal factor chart, 3) Identify the root of the problem, and 4) Recommendations and implementation.

The Method of collecting this research data is a direct interview with the company regarding problems and causal factors in developing the income and expenditure system. The primary data used is from interviews conducted. This study uses the RCA approach in analyzing problems to dig deeper into the constraints that occur in the income and expenditure system and the causative factors to solve problems in the company.

RESULTS AND DISCUSSION

Using Root Cause Analysis (RCA), the results of this study map the problems that occur in companies in the business process of income and expenditure. RCA is used to identify the "root cause" of a problem or event and carry out a design process to respond to it. In this study, the tool used for RCA is the Fishbone Diagram, which illustrates the categorization of the cause of a problem and finds out the root cause of the problem.

Figure 2. Fishbone Diagram
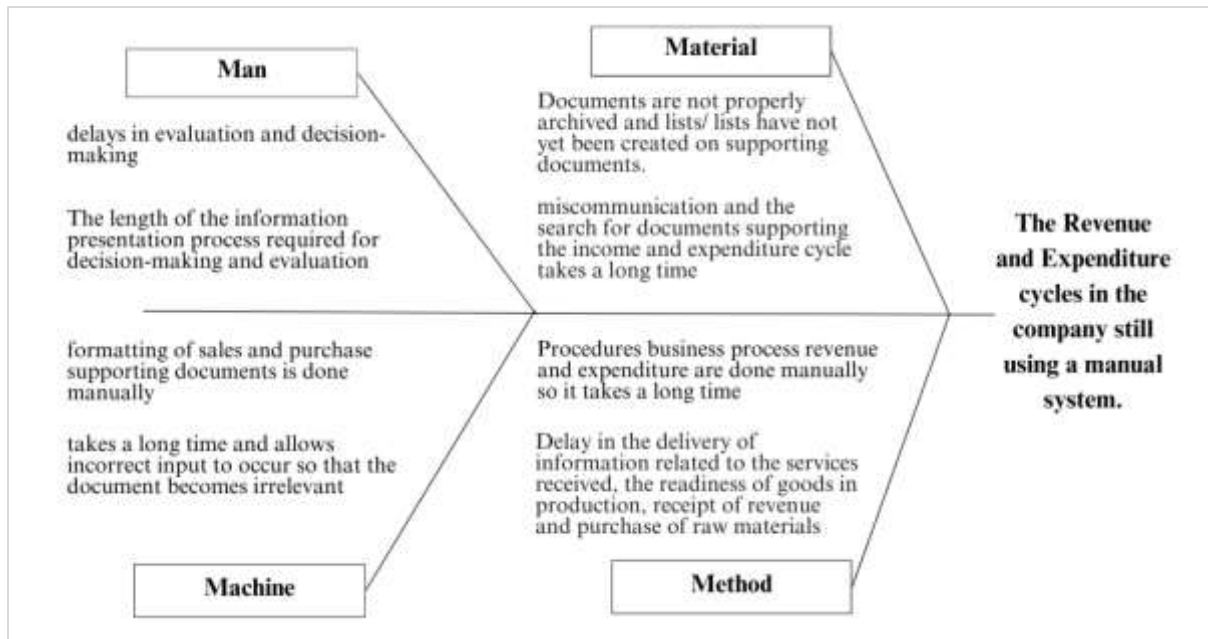
Source: Data Processed (2024)

Based on the previous Fishbone Diagram, Table 1 identifies problems in developing income and expenditure systems at PT ABC.

Table 1. Identify the root of the problem

Classification	Problems that occur	Cause
Man (user)	Delays in the decision-making process.	It is caused by the time needed to present information for decision-making and evaluation.
Material (supporting materials/documents)	Document search takes a long time.	Supporting documents such as *invoices*, *delivery order letters,* and expense notes have
	yet to be appropriately archived. Employees must return to the company to collect documents when there is a need for documents outside the company.	Supporting documents are unavailable in real time and cannot be accessed anywhere and at any time.
Machine (tools used)	There is a possibility of errors that make financial statements irrelevant.	The company's supporting documents format is still manually created using Microsoft Excel.
Method (Procedures / Systems that run)	Delays in delivering information related to services received, the readiness of goods produced, receipt of income, and purchase	The procedure for the business process of income and expenses in the company is still done manually, so it takes a long time.

of raw materials.

Source: Data Processed (2024)

The explanation of the fishbone diagram related to the problem of the company's revenue and expenditure cycle still using a manual system is the first problem of Man or user. Often, there are delays in the decision-making process in the income and expenditure cycle for short-term decisions due to the time needed to present information for decision-making and evaluation.

The second problem is that materials related to supporting materials or documents are used in the business process of income and expenditure. Supporting documents such as invoices, delivery order letters, and expense notes have yet to be appropriately archived. As a result, when documents are needed, they must first be searched on the company's computer. What often happens is the need for documents when outside the company requires employees to return to the company to collect documents. This results in department miscommunication because searching for documents takes a long time.

The next problem is the machine or tool used to present data or make supporting documents in the income and expenditure cycle. The company's supporting documents format is still manually created using Microsoft Excel. This results in the possibility of errors that make financial statements irrelevant. This problem is related to the second problem, which is related to supporting documents needing to be appropriately archived.

The last problem is the Method related to procedures or systems that run in the income and expenditure cycle. The business process procedure for income and expenses in the company is still done manually, so it takes a long time. This results in delays in delivering information related to services received, the readiness of goods produced, receipt of income, and purchase of raw materials.

With the analysis of problems involved in this company, the company should have a website that can be used to process the cycle of income and expenses in real time. In this case, website design will be carried out to make it easier for companies to archive, create supporting documents, and report income and expenses. This website can later be used by every party involved in the income and expenditure cycle to reduce the occurrence of miscommunication and facilitate decision-making. That can be accessed anywhere and anytime when data is needed.

CONCLUSION

The study results show that the company's income and expenditure system still needs to be done manually, so it takes a long time. The root of the problem that occurs is the delay in the decision-making process in the income and expenditure cycle for only short-term decisions; supporting documents have not been appropriately archived and are not available in real-time, so they cannot be accessed anywhere and anytime, the format of supporting documents in the company is still made manually using Microsoft Excel, the business process procedures of income and expenses in the company are still carried out

manually. The root of the problem lies in the classification of man, Material, Machine, and Method. Based on the study results, PT ABC should have a real-time website that can process the income and expenses cycle. In this case, website design will be carried out to make it easier for companies to archive, create supporting documents, and report income and expenses. This finding will help PT ABC strengthen its internal control and increase the effectiveness of the company's business process.

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