

ANALYSIS OF WAREHOUSE PERFORMANCE AUDITS TO IMPROVE COMPANY COMPETITIVENESS

(Case Study: PT SCN)

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Abstract---The increasingly competition requires company to improve their logistics performance. One of the important components in logistic performance is warehouse performance. The effort to improve warehouse performance competency is to conduct a comprehensive audit process on the role and performance of the warehouse, which aims to obtain an actual portrait of the warehouse capability. The warehouse check-up method is a method of auditing processes on seven perspectives; strategy, process, operations, costs, facilities (infrastructure), information systems, and people (human resources).

The case study of the audit process in this research was conducted at the PT SCN warehouse, which is a distributor of fashion products in Indonesia. The scope of the audit includes the unloading of goods in the receiving, put away, storing, picking, sorting, and loading activities in the shipping area. The results obtained indicate that the PT SCN warehouse got a final score of 71.25. The score indicates that the company's warehouse is in the status of needs Improvement. This paper suggests some improvement efforts that should be carried out by warehouse management. Improvements are focused primarily on the perspective of processes, operations, and people

Keywords---audit, warehouse, warehouse check-up

I. INTRODUCTION

The increasingly competition requires company to improve their logistics performance. One of the important component in logistic performance is warehouse performance. Good warehouse performance will improve quality performance, delivery time, customer satisfaction and reduce cost in logistics system (Marco and Mangano, 2011). Warehouses are dedicated space, designed to help achieve the target level of good service with the optimum total cost. Warehouses are needed in the process of coordinating the distribution of goods, which arises as a result of the imbalance in the amount of supply and demand. Warehouse can also be defined as a place to store a variety of products with large or small quantities between the time the product is produced by the vendor until the product is needed by consumers or work stations in the production floor. (Mulcahy, 1994). In supply driven chain, warehouses hold stocks to feed internal department such as manufacturing and production. In demand-driven chain, warehouses store goods to fulfill the needs of external customers (Emmet, 2005).

Nowadays warehousing management is increasingly developing and is increasingly being recognized as one of the important points of logistics management whose role is to add value in delivering products to customers. There has been a

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paradigm shift from a warehouse as a cost center to a warehouse as an asset center, from a warehouse as an investment center to a center that provides added value to service levels, so that an audit function is needed to ensure that warehousing goals and strategies are correct and well achieved.

Audit has always been identified with a checking activity carried out by an auditor because of certain objectives. In its implementation, the warehouse audit is still considered the same as the stock count activity which ensures the compatibility of the stock between the physical and the warehouse system. Thus, to improve the competency of warehouse performance, it is time to carry out a comprehensive audit process on the role and performance of the warehouse by conducting a total audit, which aims to get a portrait of the actual warehouse performance.

Warehouse audits will ensure that warehousing goals and strategies and systems are optimally adapted to the current and future business environment. In other words, warehouse audit can be used as a control, and as an effective warehouse rating instrument. The benefits of carrying out warehouse audits include providing an independent evaluation of warehouse strategies and operations, identifying areas and activities that need improvement, as well as providing innovative ideas in the process of continuous improvement in warehouse performance.

II. LITERATURE REVIEW

The warehouse performance audit must be carried out in line with the company's vision, mission, strategy and competencies. The warehouse audit will ensure that the objectives, strategies and warehousing systems are optimally adjusted to the business environment, both now and in the future (Arwani, 2009).

The warehouse performance audit process is important for detecting early symptoms, if there are problems with warehousing processes and activities (Ackerman, 2003a). In addition, this audit activity was also carried out to see potential problems and opportunities to provide recommendations for improvement; process effectiveness and cost efficiency, in order to improve company performance, service to customers, and company competitiveness, also help towards world-class warehousing. World class warehousing can be achieved through the following stages; (1) investigating warehouse operations consisting of: profiles, measurement system design, and auditing, (2) warehouse operations innovation (Frazelle, 2002). Thus, the function and role of the audit process is increasingly clear in improving the company's performance and competitiveness.

The audit process can be carried out with several perspectives, namely (1) process and cost control, (2) quality, and (3) personnel performance (Ackerman, 2003b). Another method that can also be used in the audit process is warehouse check-up, in this method the audit process is carried out in seven perspectives, namely: (1) strategy, (2) process, (3) operational, (4) costs, (5) facilities (infrastructure), (6) information systems, and (7) human resources (Arwani, 2009). By using this method, management can carry out warehouse audits in a comprehensive, systematic, independent and periodic manner.



figure 1. Warehouse Check-Up Perspective
(Source: Arwani, 2009)

Warehouse Check Up Perspective as illustrated in figure 1, is explained as follows:

1. Strategy. An audit was carried out to ensure that the warehouse strategy carried out was in line with the strategy of the logistics division and the company. This shows an understanding of the strategy and objectives to be achieved.
2. Process. The auditor must ensure that the specified performance measures are reached or not. If this is not achieved, the reason must also be identified, both through observation and interview.
3. Operational. The auditor must be able to dig up information from warehouse staff regarding the operational flow in the warehouse. Then compare it with the applicable procedure document, according or not. In addition, by developing his creativity, an auditor must also be able to explore the critical point in the process flow to provide feedback for increasing the effectiveness of the ongoing process. The auditor must also be able to identify which processes do not add value and must be eliminated.
4. Cost. In this perspective an audit is conducted to compare the warehousing operational budget targets with the achievement of financial expenditure. In addition, auditors can also compare with normal values in the same industry, by benchmarking.
5. Information system. In this perspective an audit is conducted to assess the feasibility, readiness, and quality of the existing warehousing information system. A good information system is able to provide: data accuracy as desired, simplify the running process, and allow expansion of future needs
6. Facilities. In this perspective an audit is conducted to assess the feasibility, readiness, and quality of infrastructure in the warehouse. The physical condition of the warehouse building and other supporting facilities greatly affects the warehousing operational activities. The physical condition of the warehouse, warehouse floor, roof, storage rack, generator set, storage room, material handling equipment, to the pantry and bathroom, are things that must be considered and checked to ensure that the conditions are proper to use and safe. Thus, safety, health and environmental issues will be the main topics of the audit process for this perspective.
7. People (human resources). In this perspective an audit is conducted to assess the feasibility, readiness, and quality of the human resources involved in warehousing activities. It is necessary to check whether warehouse personnel comply with company policies and procedures, have competency and educational suitability, have good experience, and whether there are findings for improvement.

The warehouse check-up process includes:

1. Determine audit requirements. management determines in advance the level of audit needs: whether necessary, important or not. Then the scope of the activity to be audited is determined.
2. Determine the time and frequency of implementation, and also determine the executor of the audit.
3. Planning a check-up. At this stage, the organization must provide and prepare all the resources needed, such as employees in charge of operational activities, procedure documents and warehouse policies. It was also agreed upon the method to be used in the audit. Some methods that are often carried out during an audit are interviews with employees, investigations of quality documents, sampling data to ensure several points to be explored further, and visual observations of facilities, work tools, and operations.

4. Implementation of check-ups. On the day of implementation, the auditor will conduct an audit as planned.
5. Present the results of the check-up to the management. Whatever is in the right path, critical areas that require more attention, and opportunities for improvement are delivered in an objective, detailed and directed manner.

In warehouse check-up, the assessment is carried out on seven perspectives by weighting and assessment criteria. The final results of the assessment will lead to warehouse status. The total score for each of these conditions is as presented in Table 1. Than scoring of seven perspectives is determined by weighting each criterion as in Table 2.

Table 1. Scoring and Warehouse Status

Warehouse Status	Total Score
Well Managed (WM)	90 – 100
Running Properly (RP)	80 – 90
Need Improvement (NI)	70 – 80
Extremely Need Improvement (ENI)	50 – 70
Need Fundamental Improvement (NFI)	< 50

(Source: Arwani R, 2009)

Table 2. Scoring and Weighting of 7 Warehouse Check-Up Perspectives

Perspectives	Scale	Weight
1. Strategic	10 – 100	20%
2. Process	10 – 100	15%
3. Operations	10 – 100	15%
4. Costs	10 – 100	15%
5. Information system	10 – 100	15%
6. Infrastructure	10 – 100	10%
7. People	10 – 100	10%
TOTAL		100%

(Source: Arwani R, 2009)

III. RESEARCH METHODS

The case study of the audit process in this research was conducted at the PT SCN warehouse, which is a distributor of fashion products in Indonesia. The fashion product market in Indonesia is very competitive, which requires PT SCN to have excellent competitive advantage. The management believes that optimizing logistics activities can improve the company's competitiveness. This warehouse audit activity is one of management's efforts in optimizing the company's logistics activities.

The scope of the audit includes the unloading of goods in the receiving, put away, storing, picking, sorting, and loading activities in the shipping area. The audit process is carried out using the warehouse check-up method, in seven perspectives. The methods used in the warehouse audit process are an interview with employees who are key person in each warehouse operational activity, an investigation of existing documents and compared with field operations, sampling data to ensure several points to be explored further, and observations of facilities, work tools, material handling equipment, and operational activities.

IV. DISCUSSION

After a comprehensive and systematic warehouse audit in mid-November 2019, the audit results resume for each perspective conducted at PT SCN is as presented in Table 3.

Table 3. Warehouse Check Up Scorecard PT SCN

Perspectives	Notes	Score
1. Strategic	<ul style="list-style-type: none"> – The company's strategy is in line with the warehouse operational strategy. – The company's vision and mission are well documented, and have been disseminated to all employees, but there is no specific warehouse vision and mission 	80
2. Process	<p><u>Receiving (unloading)</u></p> <ul style="list-style-type: none"> – The unloading process is quite long, so not all items received on that day can be placed on the shelf on the same day 	60
	<p><u>Put Away</u></p> <ul style="list-style-type: none"> – Found items stored in the staging area – more than one day, this causes the full staging area and the process of unloading goods to be delayed. – The location of the placement of goods is still not organized, so the put away process takes a long time. 	

	<p><u>Storage</u></p> <ul style="list-style-type: none"> – It is found that the goods are stored not directly on the shelf, but instead are stored in the aisle, this impedes the movement of goods and operators. – Found items that have been stored for more than six months, in sufficient quantities. <hr/> <ul style="list-style-type: none"> – Found an order picker that takes a long time to find the goods to be taken, this indicates that the location of storage of goods has not been arranged properly. – Material handling equipment was found that did not fit the needs of the order picker, so the picking process was not effective. <hr/> <ul style="list-style-type: none"> – Unloading is done manually, not yet assisted by material handling equipment, so operators have difficulty uploading large items 	
3. Operations	<ul style="list-style-type: none"> – Order fulfillment, according to the target set. – Stock accuracy, exceeding the specified target. – Cycle time, not yet measured properly. – Some activities are not in accordance with SOP, even some do not have SOP and KPI. 	60
4. Costs	<ul style="list-style-type: none"> – There was a slight increase in operational costs, due to the process of moving and searching for goods that should not have been done. 	85
5. Information system	<ul style="list-style-type: none"> – Warehouse management system has implemented but is still focused on the number and status of inventory, there is no feature to inform the position of the goods. 	70
6. Infra-structure	<ul style="list-style-type: none"> – There is no evidence of a maintenance and repairs program that is carried out periodically for facilities used (forklifts, racks, pallets, computer 	75

	systems, scales, etc.) – Material handling equipment are still limited.	
7. People	– Not every employee understands the job description, so they do not understand about their performance indicators. – There is no measurement and analysis of workload that will impact the ideal number of personnel in the warehouse	65

Then the total score is obtained from seven perspectives, and the warehouse status is obtained. Table 4 presents the calculation of PT SCN's total score.

Table 4. Total Score of Warehouse Check Up PT SCN

Perspectives	Score	Weight	Total Score
1. Strategic	8 0	20%	16,00
2. Process	6 0	15%	9,00
3. Operations	6 0	15%	9,00
4. Costs	8 5	15%	12,75
5. Information system	7 0	15%	10,50
6. Infrastructure	7 5	10%	7,50
7. People	6 5	10%	6,50
TOTAL			71,25

Based on Table 4, it is obtained that after an audit of the seven perspectives at PT SCN it can be concluded that the company has a final score of 71.25. The score shows that the company's warehouse is in the "Need Improvement" status.

V. CONCLUSION

The warehouse performance audit conducted at PT SCN, uses the warehouse check-up method, showing the results that the company's warehouse requires improvement. Thus the management is expected to immediately take a decision to make improvements, so that the company's competitiveness can increase.

Improvements must be made immediately, especially in the perspective of processes, operations and people. Some important things that are suggested to be fixed immediately are:

1. Improvement of SOP and KPI measurement in each warehouse activity
2. Measurement and analysis of warehouse personnel workload, to determine the optimal needs of warehouse personnel
3. Classifying goods according to the type of movement of goods, whether fast, medium, or slow moving
4. Re-allocate the placement of goods in accordance with the classification of goods
5. Adding features to the Warehouse Management System to be able to provide information about the position of goods in the warehouse.
6. Adding material handling equipment facilities to improve performance of warehouse personnel

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