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PROCEEDINGS

in Collaboration

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"Developing Innovative Technology towards Better Human Life"

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SUPPLY CHAIN OF REFERENCE AS PERFORMANCE MEASUREMENT

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ABSTRACT

"Es puter Bang Karim " is the one company that produces ice cream in the city of Palembang . This company does not have a good performance measurement . Performance measurement systems in use today are not able to measure the actual value of the company's performance , because the valuation is only based on the perspective of the production output . supply chain operations reference is one of the performance measurement tool used to streamline material and machinery . supply chain operations reference is considered more complete , systematic and more integrated . The purpose of this study was to determine the value of the performance of companies using supply chain operations reference . Results of this experiment showed that the value of the highest performance occurred in June with a value indicator (60.3) and lowest values in April with a value of (58.2) so that the average indicator 59.3 . This value includes the category average performance indicators . Need to improve performance in order to better index future

Keywords: *supply chain operation reference, performance measurement,* ;

1. Introduction

Recent years , the benefits of supply chain optimization and integration became the focus of some corporate organizations. Business competition in a globalized world requires companies to devise a better business strategy Essence of competition is how to make the services rendered for the better , cheaper , and faster than its competitors. For that a company must improve its performance in order to compete and progress. Key to the performance of the company, lies in the ability of the company to work together with its business partners.

Ice cream company that became the object of study is a food company that actively producing ice cream in the city of Palembang . So far, the company has not had a Supply Chain performance measurement , performance measurement applied only on the production performance indicators such as material efficiency and machine efficiency . With this measurement model , the results obtained are still not complete and integrated . Performance measurement system is currently not able to reflect the actual value of the company's performance , because the performance value is measured only from the perspective of production output . SCOR performance measures are needed in order to become more complete , systematic and integrated . In this study will be discussed supply chain operations reference as performance measurement.

The main objective concept of supply chain performance measurement is not the only success of the business but the overall success of entire supply chain, especially activities related to the links that connect businesses with each other to form a supply chain. That requires a special method that can be used to measure the performance of a supply chain. The objectives of this research was to determine some value of ice cream company's performance is measured by the supply chain operations reference.

2. Methodology

The study was conducted at the famous ice cream company in the city of Palembang . The method used to measure the performance of this company is the Supply Chain Operations Reference Model (SCOR) . In 2002 , the Supply Chain Council (SCC) to introduce and develop a supply chain performance measurement framework , which was known as the Supply Chain Operations Reference Model (SCOR) . This model was developed to describe the processes associated with the management of all phases involved to meet customer demand . There are five major supply chain management process defined in this model are: Plan , Source , Make , Deliver , and Return . (Vanany2009).

Stages scor measurement method are :

1. Establish key performance indicators based on interviews with management
2. Test the validity and reliability of the measuring instrument
3. Data collection by questionnaire
4. Calculate the weight of key performance indicators with Analytical Hierarcy Process methods
5. Calculate the score normalization with *Snorm of De Boer* equation

$$\text{KPI} = \frac{SI - S\,min}{(S\,max - S\,min)} x\ 100 \quad (1)$$

On these measurements, each weight indicator converted into interval specified value is 0 to 100. Zero (0) means bad and one hundred (100) is best interpreted. Thus the parameters of each indicator is the same so that the results can be analyzed.

Table 1: Performance Indicator Monitoring System

Monitoring System	Performance Indicators
<40	Poor
40-5	Marginal
50-70	average
70-90	Good
>90	Excellent

3. Result and Disscusion

Validity test is done with the help of the computer program SPSS version 17.0. This test aims to determine the correlation coefficient (rxy) with r table. With the number of samples (N)

of 50 respondents, it can be determined that the magnitude of r table 0.2353. Validity of test results obtained Table 2 as follows

Table 2: Validity test

No	Question	r_{hitung}	r_{tabel} (df=50,α=5%)	Explanation
1	Accuracy Of Enginering Material	0.342	0,2353	Valid
2	Accuracy Of Production Planning And Schedule	0.252	0,2353	Valid
3	Finished Goods Inventory Levels In Company	0.443	0,2353	Valid
4	Internal Relationships With Employees	0.509	0,2353	Valid
5	The Reliability Of The Company's Employees	0.238	0,2353	Valid
6	The Performance Of Suppliers Of Raw Materials	0.319	0,2353	Valid
7	Reliability Performance Of Employees	0.375	0,2353	Valid
8	Raw Material Suppliers Performance	0,512	0,2353	Valid
9	Employees Performance Improvement	0.525	0,2353	Valid
10	Packaging Products Process	0.285	0,2353	Valid
11	Goods Production Flexibility	0.326	0,2353	Valid
12	Delivery Of Products On Time	0.459	0,2353	Valid
13	Percentage Of Products From Suppliers	0.684	0,2353	Valid
14	Customers Service	0.609	0,2353	Valid

Reliability test is used to measure the reliability of the questionnaire. Reliability test results showed that the alpha cronbah of variable is reliable because the Cronbach alpha coefficient value is greater than the value of r table (0.6). Thus the questionnaire can be used to measure the research data.

Analytical Hierarchy Process (AHP) is used for weighting the 14 Key Performance Indicators. Weighting is done by comparing the 5 elements of which Plan, Source, Make, Deliver and Return. Variable return gets the highest weight to the value of 0,332 and the lowest weight value is variable with a value of 0.062 plan. Among the 14 KPI KPI highest value is 14, with a weight value of 0.221 and the lowest is the KPI 1 and 2 with a weight value of 0.005

Analytical Hierarchy Process (AHP) is used for weighting the 14 Key Performance Indicators. Weighting is done by comparing the 5 elements of which Plan, source, make, deliver and return. Highest weight to the value of 0.332 obtained variable return and lowest weight to the value of 0.062 obtained variable plan. Among the 14 KPIs, 14th key performance indicators has highest scores with value 0.221, 1st and 2nd Key Performance Indicator has the lowest with weight value of 0.005.

Scoring System serves to equalize the value scale of each Key Performance Indicator .So the company is able to measure and determine the level of achievement of each of the Key Performance Indicator (KPI). Scoring System using normalization process Snorm of De Boer. Scoring results in the index used to calculate the supply chain from April to June. The result can be seen in the following figure:

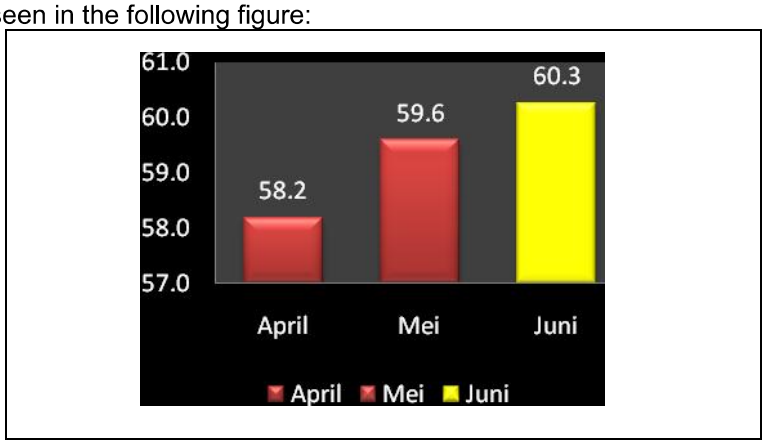

Figure 1: Supply chain performance charts

Evaluation phase is used for controlling and monitoring performance. By using the traffic light system managers will be easier to evaluate its performance. Traffic light system uses a three-color indicator, the color green for satisfactory performance (performance score> 80), yellow for good performance (performance score ≤ 80) and red for poor performance

(performance score <60). If the calculation of performance marked with red color, it should be a concern for managers to do repairs

4. Conclusion

Conclusions from measurements with SCOR method is the highest performance values in June with a value indicator (60.3) and the lowest value of the performance took place in April with the indicator value (58.2). So that the average value of the indicator is 59.3. Category is an average result. Management still needs to be improved so that the performance index increases in future

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