

OPTIMIZING WAREHOUSE STORAGE THROUGH ABC ANALYSIS: A CASE STUDY OF ROCKCEL (THAI) CO., LTD

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ABSTRACT

Abstract— Guidelines for increasing the efficiency of warehouse storage with ABC Analysis, a case study of Rockcel (Thailand) Co., Ltd. is a qualitative research. the purpose of the research to study the work processes within the warehouse to analyze problems and obstacles in warehouse management And to increase the efficiency of work in the warehouse of Rockcel (Thailand) Co., Ltd. The sample group used in the research was 4 warehouse managers and warehouse employees.

The research results found that The process works within the warehouse, the use of space in the warehouse is not cost-effective. Caused by placing the product in an orderly manner. no system to work The company does not have a house number. or number to store the product As a result, it is difficult to find products. Improving work processes within the warehouse by using the ABC Analysis theory to make the logistics indicator index As a result, it can reduce the labor cost per work cycle by 19,482.2 baht per cycle. It can reduce the operation time by 96.61 minutes and increase the reliability rate of picking raw materials correctly by 12.5%. It can be concluded that management with the ABC theory Analysis makes it possible to increase the efficiency of work within the warehouse.

Keywords— Optimization, warehouse

INTRODUCTION

Currently, the warehouse is a product storage area. Bring the goods to stay in the warehouse to wait for the movement. and continue to export products in various processes From surveying the warehouse and work processes within the warehouse of Rockcel (Thailand) Co., Ltd., it was found that within the warehouse of Rockcel (Thailand) Co., Ltd. there is still some inefficiency in the work process within the warehouse, for example, the space in the warehouse is not enough. enough Arrangement of products is not organized. Including the path of the forklift truck is a dead end. As a result, the car can be delayed. And within each type of warehouse there is no arrangement of products in the same place. causing process delays.

Rockcel (Thailand) Co., Ltd. was established on November 30, 2006 as a company that produces paper or paper products and all kinds of printing media and is a company that sells, retails, wholesales and imports paper-related products. There is 1 warehouse which is a square paper warehouse.

from the foregoing The researcher has seen a problem in the delayed work process. Uncategorized Storage Including there is no clear travel route. from such problems The researcher presents an approach to increase efficiency within the warehouse. To increase the efficiency of product storage and fix the space in the warehouse to be more efficient.

LITERATURE REVIEWS

1. Theory of warehouse management (Warehouse Management)

Warehouse (Warehouse) refers to the area that has been planned for efficiency in use and movement of goods and raw materials The warehouse serves to store goods during the movement process to support production and distribution. The goods stored in the warehouse (Warehouse) can be divided into 2 categories: raw materials (Material), which is in the form of raw materials, components and parts Finished Goods or Goods It counts to work in progress. as well as goods that need to be discarded and materials that can be recycled (Kam Nai Apiprachayasakul, 2007).

Warehouse management (Warehouse Management) is the management of receiving, storing, delivering goods to recipients for sales activities. The main goal in managing the business in relation to the warehouse is to achieve a systematic operation that is worth the investment. quality control of the collection picking, preventing, reducing losses from Operate to keep operating costs as low as possible. and taking full advantage of the area The objectives of warehouse management are as follows:

1. Reduce the distance in moving operations as much as possible.
2. Maximize the use of storage space and volume.

3. Ensure that labor, tools, equipment, and utilities are available. sufficient and consistent with the planned level of business.

4. Create satisfaction in daily work for those involved in moving goods. both incoming and outgoing using the quantity from purchasing.

5. Able to continually plan, control and maintain the use of various resources in order to provide services under the cost that is cost-effective and worth the investment according to the specified business size .

2. inventory classification theory by ABC analysis method

Inventory Control It is a job that is done to provide expenses. or cost arising from providing have the lowest inventory However, the company tends to have a wide variety of inventory. It will waste the cost. and waste a lot of time, so apart from the part that is the company's policy Inventory control should consider the Appropriate type of inventory, too Appropriate way should be to classify the inventory as kind is very important and that is of secondary importance This method is called ABC Analysis, which has principles in The classification of inventory according to the amount of inventory turnover in the year or can be concluded that ABC Analysis is an analysis to prioritize. in order to be able to handle various types of goods appropriately (Stock & Lambert, 2001).

METHODS

Educational process

When studying the problem, why does it take a lot of time to store non-classified goods And through the ABC theory, we study the mass editing route and analyze it to find a solution. Use as a tool to analyze and plan storage to improve efficiency. According to the above objectives. There is a research process, that is, to collect various information, identify problems in the organization, and improve the work process. Improve efficiency before and after improvement. Make decisions. Choose solutions.

data collection

The supplier's data is collected in the warehouse of Rocksell (Thailand) Co., Ltd. The data is collected from observation. Interview warehouse supervisors and warehouse employees to collect data, statistics, working hours and costs of Rocksell (Thailand). From receiving goods, inspecting goods, storing goods to the delivery process.

Population and sample

The 4 employees in the warehouse related to the project are as follows:

1. Warehouse Supervisor
2. Forklift driver
3. Staff.
4. Truck driver

Data analysis

In this study, researchers used a variety of data collection methods, starting from looking for company information. And visit the interior of the warehouse, observe the area around the warehouse, and interview the warehouse manager. Include employees in the warehouse, and understand the workflow and obstacles in the warehouse. Operation process of each warehouse activity Determine the working time of work process problems, analyze problems and use relevant theories to solve problems.

In this study, the main research tool is the inventory recording principle of ABC analysis, which classifies the most popular products. Group A and group 2 are group A, B and C respectively to solve the problem and shorten the pickup time. By designing a new warehouse layout according to ABC layout.

RESULTS

The results of the project found that Before improving the work process in the warehouse by using ABC Analysis and Visual Control Theories and visual control as well, the logistics indicator index can reduce labor costs per work cycle by 19,482.2 baht per cycle. It was able to reduce the operation time by 96.61 minutes and increase the reliability rate of picking materials correctly by 12.5%. In line with the work within the warehouse efficiently shown in Table 1.

Table 1
The Show product grouping according to ABC Analysis theory.

Numbe	List	Quantity/Year (Kg.)	Unit Price (Bath/Kg.)	Value (Bath)	Percentage (%)	Sum Percentage (%)	Group
1	Duplex	458,365.00	40.00	18,334,600.00	46.63	46.63	A
2	Paper C1s	272,386.00	41.00	11,167,826.00	28.41	75.04	A
3	Paper C2s	148,964.00	40.00	5,958,560.00	15.16	90.20	B
4	Triplex	89,641.00	43.00	3,854,563.00	9.80	100.00	C
SUM		969,356.00		39,315,549.00			

CONCLUSION AND FUTURE WORK

According to the research on warehouse space management and the analysis of the causes and problems of goods placement, the process in the company's warehouse Rocksell (Thailand) Co., Ltd. has errors and delays in operation. The project organizer found that the method to solve the problem and improve the warehouse efficiency is to use ABC analysis theory control theory. Used for warehouse space and goods classification. Sort the product type and specify the storage location. Pick up the product correctly and quickly. The original format of the company. As you can see, pick errors and delays. After troubleshooting, the product picking error is smaller, the workflow efficiency is higher, and the index requirements can be met. Reduce logistics efficiency to meet the following three logistics dimensions:

1. Cost dimension

Cost dimension: calculated according to the labor cost of each cycle. At first, after improving efficiency, the cost is 53790.1 Baht/cycle. The cost was THB 24022.44 per round, and the cost was reduced to THB 29767.66.

2. Time dimension

Time dimension: calculated according to the running time of the warehouse, the running time before optimization is 265.95 minutes. After improving the efficiency, the working time is 118.71 minutes, resulting in a reduction of 147.21 minutes, which can reduce the working time. Reduce costs, shorten working hours and improve workflow efficiency

3. Reliability dimension

Reliability dimension: based on the wrong raw material picking rate, the reliability before optimization is 75%. After optimization, the reliability is 87.5%, and the picking accuracy is increased by 12.5%. It can make the picking of raw materials more accurate and shorten the working time.

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