

THE POTENTIAL ENHANCEMENT OF WAREHOUSE FOR SMALL BUSINESS

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ABSTRACT

Abstract—This paper present The Potential Enhancement of Warehouse for Small Business with no more than 50 employees and revenues do not exceed 100 million baht, objectives to achieve warehouse management for Small Businesses in Khlong Yong, Phutthamonthon District, Nakhon Pathom Province. Conducting a small business study this time. Use the method of inquiry and compare with the earnings. The key variables that were studied were people, the process of warehousing, the tools or technologies used in the warehouse, and raw materials or goods stored in the warehouse. In addition, the results are compared with the results, both profit and loss, to determine the cause and find out the answers to know that the success in the warehouse sector is based on the principles of Modern manufacturing. The results of this research will reveal the factors that affect the operation of warehouses that affect profitability. Small businesses are more process-oriented than technology, but they still believe that technology will help businesses experience increased profits.

Warehouse—Small Business 1, Warehouse 2, Small Business 3, Keyword . (2-3 keywords in alphabetical order. These keywords will be used as a search term in the on-line version of the article)

INTRODUCTION

Nowadays, the development of warehouses requires a good management system, effectively generating income for the establishment, increasing the capacity in the field of logistics services business to expand the production base. Today's highly competitive investments, whether large industries or small businesses, rely on innovative developments to make logistics activities efficient. Create more income. With operational planning, warehouse control for large and small businesses (Viriya Boonmalert, 2017). Efficient and efficient logistics management creates a competitive advantage that surpasses business competitors in terms of quality. Lower cost, speed difference Punctuality of services and most importantly cheap goods and services. This creates customer satisfaction and loyalty for future purchases by building agility within the organization (Tommanee Sooksai, (2019). They are seeking ways to improve productivity. Marketing & and delivery. Obstacles to achieving these goals These communication problems led to the dissolution of the business. The processes of producing goods in accordance with the policy of management to deliver them lead to inefficiencies.

The product is not produced in time with consumer demand. The storage of goods is not tidy. Lack of care leads to a lack of confidence in quality (Andrew C. Castell, 2016)

XXX Co., Ltd. is a company in the small business for small businesses with no more than 50 employees and income not exceeding 100 million baht. The objective is to provide warehouse management for small businesses, which are companies located in Klong Yong district. Phutthamonthon District, Nakhon Pathom Province The researchers found various reasons for this to be where the problem occurred. Old, outdated, worn-out goods cannot be sold. This is due to the management of production orders that do not pass estimates or sales forecasts. Market trends, coupled with the inability to check the current inventory amount, have resulted in business owners fearing that their products will be in short supply. Therefore, it has opened orders to produce products in large quantities beyond the needs of customers, and the business model is a fashion business that requires modern products according to the times. As a result, old products fall out of popularity to become old products and will be transformed into damaged and worn-out products The consequences of the problem are also linked to other activities in the warehouse, such as insufficient storage space, causing the placement of goods together, leading to the inability to find the screen because of the oversupply of goods. Problems with arranging goods and checking the number of products monthly due to problems caused by overflowing the warehouse. As a result, the storage

does not match the location of the goods where the goods are placed regularly, leading to the inability to find the products. Inventory cannot be controlled. Therefore, the researchers are interested in studying the study to develop warehouses to support the E-Commerce market of XXX Co., Ltd

LITERATURE REVIEWS

Objectives of research

1. To study the warehouse development of XXX Co., Ltd.
2. To reduce the problem of warehouse operation of XXX Co., Ltd

Scope of research

Demographic scope and sample The 10 data-driven sample of XXX Co., Ltd. consisted of 1 warehouse manager, 3 warehouse supervisors, 3 deputy warehouse heads, 3 warehouse employees. Total 10 people

Duration scope This study was conducted from April 2022 to January 2023

Content scope The study authors collected data on 1,740 items in the warehouse. There can be 5 categories: PU products, EVA products, PVC products, Phylon products, Sneakers

Research benefits

1. To solve the factors that will lead to problems in warehouse management of XXX Co., Ltd. helps to increase the efficiency of customer service.

2. To develop the warehouse of XXX Co., Ltd., i.e. to reduce risk. Reduce shipping costs and increase readiness to cope with market dynamics

Concept Theories and research related to warehouse management

Somrotm, Gomolvanich, and Anand Derojanwong (2010) define a warehouse as a place used to store or hold goods in an area that has already been planned for the efficiency of use and movement of goods and raw materials and warehouse management. Conduct business in relation to warehousing in order to operate as a system that is worth the investment

Banabakova, V., Latyshev, O., Georgiev, M., & Stoyanov, S. (2018). As a result, the computer and computer equipment business has expanded significantly as the products in the technology sector are rapidly changing and continuously. As evidenced by the models of products that come to market, they are constantly changing. Therefore, in order to provide after-sales service, such as advice or equipment repair work, the operator must adapt to the volatile conditions of the market. To meet the needs of customers to achieve maximum satisfaction. Both in terms of providing suitable spare parts. Quality of service and delivery schedule to customers, etc. The main factors supporting customer satisfaction include high-quality low-cost tons and on-time delivery, but due to fluctuations in market demand, it is difficult to predict inventory levels and results in an imbalance between supply and demand. For this reason, inventory management is the main issue of the business sector. From the lean concept, inventory stock is a form of waste that needs to be eliminated, as it loses storage space and control costs, as well as the deterioration and obsolescence of the stock. But if the stock inventory is insufficient, it will result in losses. With the payment of compensation to the customer due to insufficient goods for delivery and reliability image. Business as well as losing profit opportunities from the sale of sinda or the provision of services, but market demand is an uncontrollable factor. Therefore, warehouse management should constantly monitor inventory levels. The aim is to reduce the loss of business opportunities and take into account the appropriate cost factors for storing warehouse management planning as part of a strategy that is critical to helping businesses succeed and be able to compete competitively

The researchers have adopted the concept of warehouse management as the basis for warehouse development, case study, warehouse development to accommodate the E-Commerce market of XXX Co., Ltd. Due to the problems inherent in the warehouse, the lack of understanding of warehouse management and management has caused problems, and no guidelines have been offered for implementation. From supervisors, deputy supervisors, and employees. This results in failures in the management and development of warehouses in a way that will manage the problem and lead to the development of the warehouse. It must be due to an understanding of warehouse management and an understanding of warehouse problems

METHODS

Pareto Principle

William (2012) cites Pareto as a tool used to show the details of what interests us in the form of a combination of bar graphs and line graphs, sorting the details in each topic in order of greater frequency to less frequently, according to rule 80:20 or Plato's law that 20% of the main causes result in 80% of the results, such as the problem of broken work. It is caused by transport, which is the main problem. If we solve the transport problem, the chances of waste will be reduced by 80%, so the root cause or root cause of the main problem must be found and solved as soon as possible

The study authors applied the Pareto Principle In warehouse management to manage the number of items with large volumes of goods and the inability to control the quantity of goods in the warehouse. It was found that the items were very active in the industry. Which items have small volumes of movement so that a large number of moving items can be used for handling in the storage area

Inventory management is an activity that aims to balance the supply chain. This affects the appropriate inventory level taking into account the level of service, where the inputs of the production process are raw materials, parts and materials. Collectively, inventory is the largest component of production costs. The warehousing department works in tandem with the purchasing department. Providing inventory has both benefits and harms. The benefits of providing inventory are Having products available for sale to customers at all times when they need them. Preventing stock outages that result in the loss of opportunities to sell products to customers opens up channels for competitors and may eventually lose customers. In addition, if what is scarce is an important raw material. Operations in both production and sales. Must be disrupted. Affecting the image of the business in the future has the penalty of providing inventory, i.e., resulting in a lack of liquidity of capital. Circulate due to excessive inventory. Lack of liquidity because inventory is part of a higher cost than revenue. In addition, the goods are stored for a long time, resulting in the product being worn out, expired, obsolete, stolen or lost, etc. It also causes money to sink into inventory, losing the opportunity to invest this money in higher yields (K.C., Chiamsong et al., 2020)

Related research

Supakorn Charoenprasit and Chusana Tianthong (2022) A study on warehouse management optimization. Warehouses are found to be an important part of each organization's supply chain management system. It is responsible for storing goods during various points of the delivery process, where stored goods can be divided into 2 categories: objects and finished goods. If the company has difficulty in the layout of the products in the warehouse, it may not have enough space to store the goods and raw materials and may result in the loss of more time than necessary to find the goods

Prachaporn Sethasthan et al. conducted research on the rubber sheet manufacturing process, finding that there are 44 working steps, which can be divided into 4 main working steps. As a result, the rubber sheet manufacturing process experienced delays and found that there were 5 reasons that contributed to the delay in the production process: fatigue, waiting, etc. Long distances Therefore, the principle of reducing waste has been applied to improve the rubber sheet production process by proposing that the company change the equipment in the work and reposition the layout. To reduce working time and reduce the distance to move raw materials

Samran Chamsom and Surasak Pornbhajidkul (2021) Study to determine the causes of problems arising from operations. It was found that in the placement of goods there is no clear category layout defined. As a result, the products were mixed up, including having the goods piled up in the aisles of the warehouse, so fishbone diagrams were used to help determine the cause of the problem. It was found that the main problem was that long searches of goods accounted for 23.3% of the work due to problems, and the work process was improved by making a stock card system for disbursement and admission of all goods in order to know the movement of each item. On the premises, the store is designed and categorized according to sales according to bestsellers and the layout of the store is fixed, with fast-moving items being placed close to the door to make it easier to disburse. Train employees to know the fixed storage patterns and timekeeping in the work of disbursement of goods

RESULTS

The main contributors to this research were 10 employees of XXX Limited by specific sampling, as they were directly involved in warehouse management. 6 years experience, 3 warehouse heads, 5-6 years of experience, 3 deputy warehouse heads, 4-5 years of experience, and 3 warehouse employees with 2-3 years of experience. And the results come to a conclusion, brainstorming and analyzing to find solutions to the company's problems.

Findings

Based on the problems derived from the analysis, it can be concluded that the main problem is the problem of excessive inventory volumes and theoretically find solutions. Conceptual principles to contribute to the development of warehouses. Summary of findings based on research objectives as follows:

1. Warehouse development of XXX Co., Ltd. according to the schematic theory of cause and effect. (Cause and Effect Diagram)

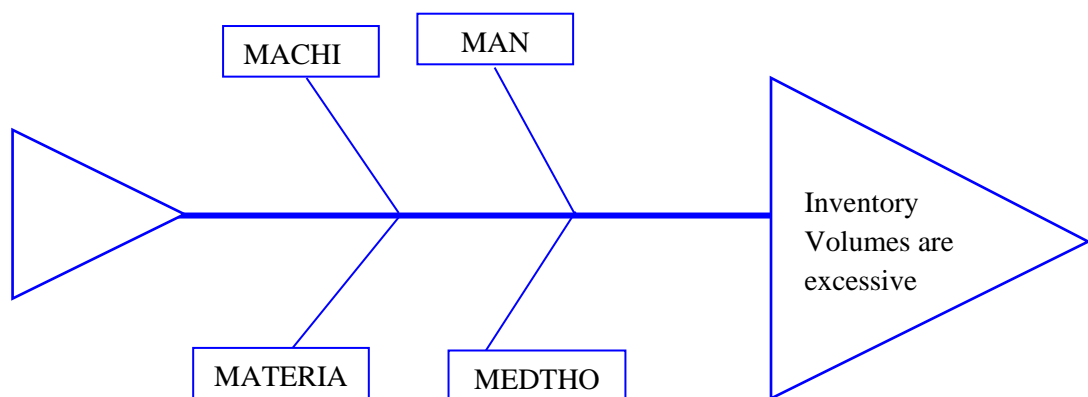


Figure 1 The cause-and-effect diagram analyzes both the cause and effect of the problem at the warehouse from the cause-and-effect schematic theory. We can identify the factors that caused the problem in a schematic map and extract the following points:

1. MAN lacks knowledge in warehouse management, resulting in warehouse management inability to manage warehouses. Control the quantity of goods. Also, inventory amounts cannot be checked. Old and new goods cannot be dispensed separately
2. MACHINE Information Systems does not have comprehensive coverage in the warehousing sector and is too difficult to use. Since the original information system was not developed and there was redundancy in the work, there was confusion in the work
3. MATERIAL Lack of effective working equipment to manage warehouses, such as: Forklift Bar Code Launcher
4. MEDTHOD, unsystematic product management causes problems in storage activities. Product management activities, verification activities. As a result, in the verification activity, mistakes and discrepancies from the actual number resulted in the need to call in goods, leading to problems

2. Warehouse development of XXX Co., Ltd. in accordance with Pareto principle

The concept can be applied to warehouse management, which will show that if the warehouse space is 100%. We can apply the 20% Pareto Principle that creates 80% value to make it in a convenient space to work in warehouse activities. Storage activities can be organized to expand the base of goods by 20% to achieve rapid movement and clear control in terms of quantity and quality. The concept can be applied to warehouse management, which can be explained in 2 ways, as follows:

Approach 1, based on the principle of Pareto 80/20 based on storage space as a set-up, means that in 100% of the warehouse space there is a regular use area or where up to 80% of the goods are moved in and out of just 20% of the total warehouse space available.

Approach 2, based on the principle of pareto 80/20 based on goods in warehouses, is the set-up, meaning that 100% of the goods in the warehouse have only 20% of the goods in the warehouse. This indicates that 80% of the goods stored are moving only 20% of the total moving goods

From both approaches, it can be shown that if the warehouse space is 100%, we can take 20% that can generate 80% value to make it in a space that is convenient to work in warehouse activities. Storage activities, organizing activities, and products can be expanded by 20% to achieve rapid movement and clear control in terms of quantity and quality

Table 1 E-Commerce Warehouse Monthly Report 2021 for the past 5 months

Month	Order	Delivery of good	Not Delivery in Time	Cancelled Order	Cancelled Order Can't find
Apr 65	21,604	12,215	7,389	1,275	725
May 65	24,895	18,750	4,798	946	401
Jun 65	25,715	18,641	5,312	1,025	737
Jul 65	26,925	17,539	6,045	1,875	1,466
Aug 65	25,421	16,542	5,413	1,953	1,513
Sep 65	26,584	25,634	436	295	219

Discussion of the result

In the research study titled Warehouse Development Study of XXX Co., Ltd., the objective is to know the problems that arise in the warehouse and find solutions. Guidelines for improving warehouse development using conceptual principles Various theories and researches to be applied in warehouse development Based on observational studies and interviews with sample populations. The study authors analyzed the data and concluded that the problems that occurred in the warehouse were as follows:

- (1) Problems with inventory management
- (2) Problems of excessive inventory volumes
- (3) Problems with outdated goods
- (4) Problems with knowledge and ability to understand management
- (5) Problems with expired, deteriorated, damaged goods, and
- (6) Problems with staff lack of understanding. In warehouse management, warehouse development

In line with Anurattananon, et al., (2019). A study on warehouse management optimization found that inventory management if improper storage is available. Lack of good forecasting and quantity control can lead to high costs and items that customers don't want may be overstocked and have difficulty storing them. If stored efficiently, the adoption of goods for production will be carried out quickly and reduces working time

In accordance with objective No. 2, in order to reduce the problems in the operation of warehouses to subordinate the E-Commerce market of XXX Co., Ltd., based on the analysis of the problems arising in the warehouses, the study authors obtained the main problems that constituted the root cause of all the problems. make The inability to organize space to operate an E-Commerce warehouse is the problem of the warehouse having too large a volume of goods. Once the researcher analyzes the problem, they find a solution to the problem. To be applied in problem management by using cause and effect diagram theory, which is the main factor of the problem to analyze. The reasons for the problem analyzed from 4M are:

- (1) MAN,
- (2) MACHINE,
- (3) MATERRIAL,
- (4) METHODS and can be summarized.

As follows:

- (1) MAN lacks knowledge concepts in warehouse management,
- (2) MACHINE, information systems do not have comprehensive coverage in the warehouse sector,

(3) MATERIAL lack of equipment to work efficiently, and

(4) METHOD, non-systematic product management causes problems in storage activities. Product management activities, proving activities, and research

Samran Chamsom and Surasak Pornbhajidkul (2021) Studying the causes of problems arising from operations. It was found that in the placement of goods there is no clear category layout defined. As well as having the goods piled up in the aisles of the warehouse, fishbone diagrams were used to help determine the cause of the problem. Improve the workflow by making a stock card system, knowing the movement of each item, designing, storing and categorizing it according to sales by bestseller, and defining the storage layout as a fixed position based on the Pareto principle concept. The Pareto Principle can be applied to warehouse management to solve or reduce problems. If the warehouse space is 100%, we can take 20% of the pareto principle, which creates 80% value, to make it in a space that is convenient to work in warehouse activities. Storage activities, product organizing activities have expanded the product base by 20% to achieve fast movement and clear control. Both in terms of quantity and quality, bringing the list of products and quantity of goods around the corner per month In the past 5 months, we have grouped products according to the pareto principle 80/20 so that the products can be classified as 20% of the products that have circulated in the warehouse to 80% of the total inventory. Check the quantity of products. Specify the location of the item. Record the location of goods in the information system to be able to control the amount of goods circulating very well

In line with Charles, G.P. (2002). Ordering requires careful consideration of customer needs in order to be suitable for the current production of goods, because production costs are a measure of the success of a business that must compete with competitors in the field of operational cost management. It was also found that the place where goods are stored within the corridor saves more travel distance than using a transverse walkway. This makes it possible to streamline the management of goods in the warehouse to bring the goods out for production

CONCLUSION AND FUTURE WORK

Suggestions in this research

Study of warehouse development to support the E-Commerce market Case Study XXX Co., Ltd. has developed an E-Commerce warehouse in the area of goods calculated from the Pareto principle, so only 20% of the items in the E-Commerce inventory have also listed products that need to be improved and revised, and 80% of the total items in the warehouse are processed

Suggestions for further research

In order for E-Commerce warehouses to operate efficiently, developments in undeveloped areas should be carried out by conducting more quantitative research to obtain greater information on warehouse development

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