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Implementation of Inventory Management to Increase Profitability in PT. Satria Sukses

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Abstract

With advances in information technology, businesses are now able to gain information about their customers' future demands. This document describes various ways to use this visibility in end-product inventory management at the operational level. The aim is to explain the results of four different types of planning information: point-of-sale data, customer forecasts, stock-on-hand data, and planned orders. This information includes the capital tied up in inventory when using the re-order point (R, Q) inventory control method in the distribution network. This research conducted at PT Satria Sukses uses explanatory research to solve inventory problems, and also includes application research that aims to find ways to improve the company's current profitability. This research takes data samples from 2015; there are some restrictions during the preparation of this research, such as calculating the reorder point, safety stock, and the cost of ordering goods to suppliers. The results show that the value of information sharing in operational inventory control varies greatly depending on the type of information shared and whether the demand is fixed or not.

The most precise type of information yields significantly higher value, while other types of information yield lower value. Regardless of the type of demand, point-of-sale data sharing is useless; stock-on-hand information is useful in situations where demand is fixed; customer forecast and planned order information is useful in situations where demand is not fixed. Based on a specific model design and lacking primary empirical data, the simulation methodology limits the study to relationships within supply chains and distribution networks with a small number of customers. Recommendations are given on what type of information is appropriate to share with different types of demand patterns and distribution networks, as well as how the value of information sharing is affected by order batch size and lead time when using *reorder points*, *EOQ (economic order quantity)*, and *safety stock* methods. Not many studies have provided a specific assessment of the possible impact on inventory control when sharing planning information in various contexts. The results of this study also question some previous research on information sharing.

Keywords: Inventory Management, Reorder Point, Economic Order Quantity, Safety Stock

Introduction

Inventory is one of the most important and fundamental issues in a company. No matter whether it is a trading company or a service company, inventory is an important part of assets that can be easily liquidated in various businesses (Rajeev, 2008) ^[1]. In order to maintain smooth production and sales, it is necessary to do inventory management properly. Since the main goal of a business is to earn maximum profits, companies try to increase their revenue by supplying large quantities of goods. However, it is also not realized that this will increase the inventory costs that must be borne by the company. According to Atkinson (2005) ^[2], inventory costs are generally between 20 to 40% of the amount of inventory held by the company. The application of appropriate inventory management methods has an impact on the profits of business entities. Research by Abdurraheem, Yahaya, Isiaka, and Aliu (2011) ^[1] on small businesses in Kwara city, Nigeria, recorded evidence to this effect over a 10-year period. The study examined the correlation between inventory management and profitability performance of selected small businesses. The conclusion from this data is that there is a positive correlation between inventory levels and small business profits, with profits increasing when effective inventory management is used. In appreciation of how crucial inventory management is, it is necessary to implement proactive inventory management, restructure supply chain operations, and refresh inventory standards to achieve cost efficiency. The implementation of inventory management involves timely delivery of goods and orders, data adjustment, damaged and unusable goods, delivery

time from suppliers, required ordering time, and level of service provided (Eckert, 2007)^[4].

For PT Satria Sukses, the implementation of effective stock management is essential to overcome various problems associated with inventory, which can have a negative impact on business continuity.

It can be observed that inventory costs increased due to inaccuracies in the quantity and timing of orders, as well as the buildup of inventory resulting in a decrease in fabric prices, indicating inefficient sales. As a result, PT Satria Sukses loses money because it has to pay for costs that do not add value. In addition, in carrying out business activities, there is a lack of adequate recording and approval in providing data for owner decisions and stock management that has not been effectively organized. The impact is a lack of effective supervision and control as some activities cannot be thoroughly monitored. Because there are several problems associated with inventory management, PT Satria Sukses has not adopted an inventory management system that can have an impact on increasing the profitability of its business.

Implementation of Profit-Enhancing Inventory Management

Inventory in a trading company includes products purchased by the company for resale as an important part of daily operations. According to Ristono (2009)^[7], if inventory is excessive, the costs charged include storage costs in the warehouse, potential damage to expired goods, and the risk of damage to goods stored in the warehouse.

By realizing the importance of proper inventory management, there is a need for inventory management that matches the needs of the business. According to Ristono (2009)^[7], inventory management has several objectives. One of them is to ensure that consumers' needs are met and their demands can be fulfilled. In addition, other goals are to maintain product continuity, increase sales and profits to avoid small purchases, and organize storage so that it is not too large. When the application of inventory management is not appropriate, it will have an impact on the inventory costs that arise. Based on Chopra and Meindl (2010)^[3], Hansen and Mowen (2007)^[5], and Ristono (2009)^[7], there are three different types of inventory costs. First, ordering costs include all the additional costs associated with placing or receiving additional orders, no matter how large they are. Secondly, storage costs are costs that arise from investments in inventory and maintenance, as well as physical investments to store inventory. Thirdly, inventory shortage costs are costs incurred due to the inability to provide products when requested by customers.

In order to achieve efficient and effective inventory management, it is necessary to implement inventory management. According to research by Hansen and Mowen (2007)^[5], inventory management is a traditional method based on demand forecasts with the aim of preventing inventory shortages, avoiding the formation of too much inventory, and avoiding large purchases. Inventory management is divided into two types, namely (1) traditional inventory management which aims to determine the ideal amount of inventory by calculating the maximum purchase size taking into account the push system, significant inventory, large number of suppliers, departmental structure, specialized labor, centralized services, and low employee involvement. (2) Just-In-Time

(JIT) inventory management system is a system that is oriented towards meeting demand by pulling goods through the system according to existing demand, rather than pushing goods into the system based on demand forecasts. This system has two main objectives, namely increasing profits and improving the company's competitive position.

In order to reduce the large costs of maintaining inventory, it is necessary to find ways to reduce these costs. One example is the economic order quantity (EOQ) method which is used to calculate the number of orders that can reduce total costs so that inventory management becomes more efficient. In addition, another effort that can be made to achieve efficiency is to rearrange the order points. In its implementation, it is also necessary to take into account the time required from ordering goods until they arrive at the warehouse where they are received, which is referred to as the lead time. After calculating the economic order quantity (EOQ) and reorder point, companies need to also consider the uncertainty of consumer demand by using safety stock. By using the specified safety stock and reorder point, the order will be more precise with the appropriate time and quantity.

It is important for trading companies to implement efficient inventory management, as this can have a positive impact on profitability, as seen from the use of successful inventory management designs. The way to improve the profitability of PT Satria Sukses's business is to monitor the performance of existing inventory in addressing inventory issues.

Research Methods

Research conducted at PT Satria Sukses uses the type of explanatory research with the aim of overcoming problems in inventory management. This research is also belongs to the category of applied research that seeks to provide solutions to increase the company's business profits. The focus of the research is on various types of batik cloth from three well-known brands, namely Arjuna, Nakula and Sadewa. The selection of this research object is based on the high number and frequency of orders, as well as high interest from buyers. This study uses sample information from 2015 in the research process. Some restrictions are applied in the inventory analysis to calculate the reorder point, safety stock, and cost of ordering goods from suppliers.

In this study, there are various discussion frameworks related to the main research question which reviews how the implementation of inventory management can increase the profitability of PT Satria Sukses. In response to the main research question, there are several research questions. One of the first mini-research questions is how inventory was managed during the 2015 period, direct observation of store operations.

The purpose of this activity is to obtain information on the overview and details of how inventory is generally managed.

In the second problem in this small study, it discusses the obstacles faced in managing inventory at PT Satria Sukses. The data collection methods used include interviews, document analysis, and observation which are used as sources of information. The intention is to understand the problems and shortcomings in business operations, recording, and inventory management.

In this third study, it is intended to investigate how the implementation of inventory management can help improve

the profitability of PT Satria Sukses's business. Data is collected through various sources and methods, such as conducting interviews, conducting document analysis, and observing directly. This is done so that the level of accuracy in inventory management can be improved and the reliability of information is guaranteed when implementing proper inventory management at PT. Satria Sukses with the aim of increasing profitability.

Interviews, document analysis, and observation were some of the methods used to collect data in this study. The main objective was to understand the extent of effectiveness of inventory management using efficient inventory management methods and to assess the level of profit achieved through reduced costs and increased efficient sales.

Results and Discussion

In carrying out inventory management at PT Satria Sukses, there is no implementation of inventory management which results in inventory-related problems and a lack of overall organization.

Table 1: Capacity Data and Overorder Frequency

Batik Arjuna Shirt			
Date	Purchase	Sales	Supplies
05/02/2015			221 pcs
18/02/2015	132 pcs		353 pcs
09/05/2015	215 pcs		568 pcs
02/10/2015	77 pcs		645 pcs
25/11/2015		217 pcs	428 pcs
Batik Nakula Shirt			
Date	Purchase	Sales	Supplies
05/02/2015			109 pcs
18/02/2015	70 pcs		179 pcs
09/05/2015	97 pcs		276 pcs
02/10/2015	120 pcs		396 pcs
25/11/2015		247 pcs	149 pcs
Sadewa Batik Shirt			
Date	Purchase	Sales	Supplies
05/02/2015			112 pcs
18/02/2015	93 yards		205 pcs
09/05/2015	103 yards		308 pcs
02/10/2015	121 yards		429 pcs
25/11/2015		259 pcs	170 pcs

Table 2: Stockpiling Data

Quantity	Item Name
109pcs	Batik Mega Mendung Shirt
115pcs	Batik Parang Shirt
80pcs	Batik Slope Shirt
50pcs	Batik Nitik Shirt
52.5pcs	Batik Kawung Shirt
59.5pcs	Batik Ceplok Shirt
94pcs	Batik Patch Shirt
63pcs	Truntum Shirt Fabric
42pcs	Banyumas Shirt Fabric

Another procedure is that the inventory is done once a year, so the stock data is inaccurate and unreliable. Because they only rely on the last balance on the inventory card and do not check the physical condition of the goods, the owner cannot know how much is left and how much needs to be ordered. When selling products, there is often no document used to record buyers' orders, especially if an employee has to serve many buyers at once. This can lead to human error as employees can neglect to record the number of buyers'

orders. In addition, a lack of effort in maintaining and safeguarding inventory can result in a lot of damaged and weathered batik, which has to be discarded and results in greater losses.

In addition, by paying attention to the ever-growing trend in innovation, business owners can order fabrics with the latest designs that are included in the stock of fast-selling items. As a result, there are a lot of old items piling up in the warehouse that have to be sold at a low price, or in other words, a "warehouse wash," due to the lack of buyer interest in buying them. For example, Sadewa Batik Shirts were originally offered at Rp 60,000 per shirt. However, due to its excessive availability, it is now being sold at Rp 55,000 per shirt.

Table 3: Classification of Inventory Turnover of PT Satria Sukses in 2015

Slow moving items	Fast moving items
Batik Kawung Shirt	Batik Mega Mendung Shirt
Batik Ceplok Shirt	Batik Parang Shirt
Batik Patch Shirt	Batik Slope Shirt
Truntum Fabric	Batik Nitik Shirt
Banyumas Fabric	Ceplok Fabric
	Patchwork Fabric
	Kawung Fabric

PT Satria Sukses has shortcomings in managing its inventory and also lacks adequate documentation and authorization. Not having sales orders makes the job of sales clerks difficult as they have to serve several buyers at once, especially if there are many of them. This increases the possibility for employees to forget the number of orders from buyers. In the selling process, notes are not always generated when a sales transaction occurs. A receipt is only made when the buyer wants one. If the customer does not ask for a receipt, he will just pay the entire amount and the cashier will only roughly record the items purchased, which is sometimes forgotten.

The current stock card format is still less detailed and ineffective in supporting optimal inventory management. There is no record that accurately records the number of goods coming in and out every day because sales are not always updated and year-end stock counts are not done. Obviously, this situation causes customers to be unable to correctly select the type and quantity of goods they want to order.

		Item Name								
Retrieved	Description	Purchase			Sales			Supplies		
		Total Pcs	Price Rp	Total Cost Rp	Total Pcs	Price Rp	Total Cost Rp	Total pcs	Price Rp	Total Cost Rp

Fig 1: Stock Card of PT Satria Sukses

By considering the features of PT Satria Sukses, conventional inventory management, which can be seen from (1) the existence of significant inventory; (2) many suppliers PT Satria Sukses has many suppliers, consisting of fifteen suppliers from various regions of Java; (3) low employee involvement where the owner makes decisions, and employees cannot participate in decision making; (4)

centralized where PT Satria Sukses's business decision making is all the authority of the board of directors.

Due to the considerable stock buildup and price drop due to the growing trend of innovation, owners may consider making products from the piled-up batik as an alternative option. In other words, they can work with tailors to turn the batiks into products such as negligees, bed sheets, bags, and others. Owners can use their own brand when producing these products, allowing them to expand their business more widely. Because of this, the piled-up fabrics add value without having to sell them in warehouses at the same price. which is lower. With the sale of innovative products, this business development can reduce losses due to declining batik prices and increase profits.

To find out how big PT Satria Sukses is and how much stock it has, it is necessary to conduct a stock-taking regularly, at least once a month. Thus, warehouse storage space can be considered. The owner can estimate whether or not the ordered goods can be stored in the warehouse before ordering the goods. Thus, stock accumulation can be avoided and the storage of goods in the warehouse can be more efficient. In addition, since the owner and warehouse workers will pay more attention to the condition of the stock in the warehouse every month, the owner can improve the maintenance of the batik in the warehouse by preventing damaged or perforated fabrics.

In addition to serving as a document of proof of actions taken, stock cards are useful for tracking inventory and knowing how many items are in and out. In addition, stock cards can increase employee responsibility because they allow them to track employee activities and find the source of error if there is a difference in the physical amount of goods recorded on the inventory list and from the available documents. Since PT Satria Sukses's stock card is incomplete, the researcher suggests the following stock card format:

PT. SATRIA SUKSES STOCK CARD

Retrieved Document No	Description	Purchase			Sales			Supplies		
		Total	Price	Total Cost	Total	Price	Total Cost	Total	Price	Total Cost
		(Pcs)	(Rp)	(Rp)	(pcs)	(Rp)	(Rp)	(pcs)	(Rp)	(Rp)

Fig 2: PT Satria Success Stock Card Recommendation

Since all orders from one buyer are recorded in one sales document on the same day, employees can serve multiple buyers more flexibly and safely. Sales documents can also be used by the owner as a way to assess employee performance by seeing how often they serve customers and how successfully they make sales. In addition, this system makes it easier to update outgoing data on stock cards based on SO numbers. The owner does not need to manually record sales that can be lost again, and notes do not need to be made again-they are still made according to the buyer's request.

SALES ORDER PT. SATRIA SUKSES			
SO No:	Date:		
SPG Name:			
Item Name	Total	Unit Price	Total
Employee Signature:			

Fig 3: Sales Order Recommendation Form

Utilization of inventory management at PT Satria Sukses can be achieved optimally by implementing the Economic Order Quantity (EOQ), reorder point (ROP), and safety stock methods. This will help in determining the ideal order quantity to suppliers as well as the frequency of ordering. In addition, to anticipate uncertainty in buyer demand, it is important to know when orders are placed and the amount of inventory available.

In this text, we will discuss the EOQ calculation for three types of pants products Arjuna, Nakula, Sadewa. The inventory data used is from 2015, and time is divided into three categories: high season (January, February, March, April), normal season (May, June, August, and September), and low season (October, November, December). This separation is based on the noticeable increase in the level of inventory sales in certain months. (sales data of PT. Satria Sukses in 2015 where for sales of Rp. 20,000,000,- including low season, Rp. 20,000,000,- to Rp. 25,000,000) including during normal season, and sales of Rp. 25,000,000,- including high season).

Table 4: Comparison of Order Quantity Before and After

	Arjuna		Nakula		Sadewa	
	Before EOQ	After EOQ	Before EOQ	After EOQ	Before EOQ	After EOQ
	(pcs)	(pcs)	(pcs)	(pcs)	(pcs)	(pcs)
Low	175	47	68	47	91	49
Normal	109	87	97	97	102	97
High	87	99	120	110	110	110

Table 4 shows a comparison that the order quantity after the application of EOQ is less than before the application of EOQ. So, this comparison shows that the number and frequency of orders are more efficient. The difference before and after the company applies the recommended force operation is Rp. 25,000,000, - Rp. 18,675,000, - = Rp. 6,325,000,-.

From the above calculations, it can be seen that the profit that will result from the savings in purchasing costs if the researcher implements the suggested forcing operation is Rp 6,325,000,-. This savings of 25.3% is due to the store's ability to operate efficiently in terms of order volume and lead time over multiple seasons in different markets. Therefore, stores that implement this forced activity certainly not only have an impact on profits but also help overcome the force majeure problems that exist at PT Satria Sukses. Problems that arise as previously described, such as uncertainty in order quantities and delivery times, can be overcome by knowing the EOQ, ROP, and safety stock of each item.

By knowing the delivery time and quantity. In the next order, the shipper can estimate the depletion rate of the existing inventory, so the new model order planning becomes more efficient and controllable because the shipper can better choose a response if the old goods run out. In addition, thanks to the owner's creative idea of turning the pile of fabrics into a more profitable product, the force operation further increases profits. The following is a comparison before and after the force operation.

Table 5: Comparison Before and After Implementation of Recommendations Inventory Management

Before Implementing Inventory Management	After Implementing Inventory Management
<ul style="list-style-type: none"> ▪ Inventory accumulates due to excessive orders. ▪ Orders for new fabric models may be delayed due to inventory buildup 	<ul style="list-style-type: none"> ▪ Orders are better organized by understanding the quantity and timing of orders, thus improving the company's ability to have the "right product, at the right time". ▪ Losses due to non-delivery can be avoided Create new fabric samples due to less fabric inventory <ul style="list-style-type: none"> ▪ Easier product search due to fewer items, which allows for more careful organization in warehouses and stores ▪ rent multiply Doing business more creatively by making products from piles of fabric becomes more profitable
<ul style="list-style-type: none"> ▪ Lack of documentation during business activities at both branches and warehouses. ▪ Employees feel free and at risk of fraud due to unmonitored activities and weak document privileges. 	<ul style="list-style-type: none"> ▪ Document authorization for all tasks prevents human error and employee fraud. ▪ Owners can improve supervision, prevent fraud, and assess employee performance.
<ul style="list-style-type: none"> ▪ The owner orders products based on trends without considering buyer preferences. ▪ Displaying products carelessly causes the price to drop because the old products are no longer in trend and do not sell well. 	<ul style="list-style-type: none"> ▪ Sales analytics help owners know sales levels and buyer preferences, which prevents stock-outs and improves buyer satisfaction. ▪ Full documentation is more than enough for each operation so that the owner can refer to it in the product selection, the product displayed is more accurate. ▪ With the calculation of EOQ, ROP and warehouse safety survival, ordering new samples becomes more efficient and controllable because adjustments can be made at that time when the old stock runs out.
<ul style="list-style-type: none"> ▪ The cost of ordering Arjuna, Nakula, Sadewa batik materials borne by the store for one year is IDR 25,000,000. 	<ul style="list-style-type: none"> ▪ PT Satria Sukseses experienced an annual expense of Rp. 18,000,000 and cost savings of 25.3% as a result of implementing inventory management.

The researcher found that the use of conventional power operations is still not effective. Based on the interviews and findings, the researcher suggested implementing power operations by conducting stock-taking to avoid accumulation and streamline the storage of goods; creating a more detailed stock card to see the flow of goods in and out; and creating a sales agreement document to recognize. In addition, PT Satria Sukseses gained greater profits thanks to innovative business development, namely making products from the accumulated batik.

Conclusions and Suggestions

Labor management applied at PT Satria Sukseses is less than optimal so there are many unprofitable activities. This is reflected in enforcement-related problems such as inadequate order quantity and timing, inventory hoarding, weak authority and inadequate documentation, unproductive sales, and labor-intensive deliveries that do not provide added value. Introducing batch management improved cost efficiency due to EOQ, ROP, and safety stock, and made batch management of purchasing, warehousing, and sales activities more organized. In addition, the manufacturing of products from laminated fabrics allows for more profitable business development and higher profit margins. The implementation of this initiative is supported by the presence of SO cards and stock cards that can be used as a tool to evaluate and monitor employee performance. Therefore, the management of PT Satria Sukseses's force will become more organized and the implementation of force operations can develop PT Satria Sukseses's business in increasing maximum profitability.

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