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# **Small Business Strategies for Inventory Management**



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by

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### **Abstract**

In this day SME is the beginning of the new generation to starting a business. And we see that is important to study this and solve the problem in various points for people who are interested to start a business. There is a way and very convenient even more. The research will be useful for people who want to do business (new business). Include both group as you want to develop business process and the structure of inventory management. The expectation is this research can help us to understand the strategies for inventory management another thing is to make people with idea and interests who want to start a new business. And this research will show the system that can use to manage inventory in small business.

**Keywords:** Small and Medium Enterprise, Inventory Management, Interview

## 1. Introduction

Small and Medium enterprise tends to have limited resources and have less marketing investment and other business issues that big companies do not need. (hsin-Hsuan Meg Lee, 2017) Growing companies tend to tie more available cash into their inventories then in any other part of their business (Fraser and Jill Andresky, 1991). One of the problems a small business usually has to cope with is inventory management. Inventory management is strategically important for business success because it makes the production system more diversified by increasing or decreasing inventories and generating inputs and financial profits. SME forced to develop technology and management to increase revenues and expand for the consumer market. The company involved about inventory management, taking into account various aspects such as production rate/materials, uncertainty, demand, time, price changes depending on quantity purchased, distribution centers and other factors (Panzato and Rodrigues, 2011).

Effective management is not just about managing people or the market, but also about managing the inventory. In 2007, there were 2,375,368 enterprises in the country, of which 2,366,227 were small and medium enterprises (SMEs) or 99.6 % of the total number of enterprises.

SMEs are classified by type of business as follows: SMEs in trade and maintenance 973,248 or 41.1 %. The number of services was 708,841, or 30.0%, manufacturing sector 668,185 people or 28.2% of the total number of SMEs. Based on the study inventory management is part of supply chain management to get the right amount of sales right at the right time. Including the raw materials, goods ordered to sell, goods to sell. It important to SMEs because inventory has affect cost to reducing the number of unnecessary things (For example, the order is over goods deteriorated before sale) because the product cannot be sold out and the residue will be "waste" includige; raw materials or product is enough (because of a missed estimate), it will cause a loss of opportunity and damage to reputation. The research questions were as follows: 1) what is the inventory gy currently implemented by Thai SMEs?, and 2) which inventory system is useful for invent

#### 2. Literature Review

## 2.1 Theory and Definition

## **Inventory Management**

Company has their own storage space; the management difference and advertising are also having a different way to manage. However, the purpose of advertising space is the same, the space used for advertising must be free of cost and the minimum cost of advertising. Inventory management refers to all activities related to taking care of product, including inventory development and inventory management, raw materials, finished goods. Therefore, there must be sufficient material and format to ensure that all costs are not exceeded (Kotler, 2002). The role of inventory management is to maintain the amount of goods in the inventory. The planning and inventory control system must be based on the customer, including the movement of goods in warehouse (Toomey, 2000). Also, from importance of inventory on the company's balance sheet, inventory is an asset in the company's balance sheet. If the balance sheet has increased significantly, there may be several reasons. Because of that company has certain strategies by reducing investment in fixed asset example warehouse, office supply (Coyle, Bardi, and Langley Jr, 2003).

There are millions of products produced in our society. However, there are two steps to controlling inventory: 1) What should an inventory order be? 2) When should the inventory order be placed? The objective of inventory management is to reduce the problem if the profit is made faster, but expensive than expected or Earning profit are slower than expected. Such a strategy would be the best inventory control, which would reduce the sum of the significant costs associated with production, storage and inventory shortages per unit of time (Ziukov, 2015).

Good inventory management is the value of information. Managers may need to invest in technology that collects and stores relevant information for effective inventory management. (I) information on requirements such as forecast. (ii) information about assets such as available inventory when ordering and location (iii) information about replenishment lead times (Ozer, 2008). Inventory management plays an important role in every company because inventory systems do not work, it affects customer loss and sales. Efficient inventory management can generate sales for companies that affect the company's performance, so it must be systematically managed by a dedicated team of specialists in the field. (Journal of Advanced Management Science Vol. 4, No. 4, 2016).

#### Relationship between Inventory Management & Company Performances

The company's performance depends on many variables. It is based on sales, marketing, good human resources, low production costs. (Bourne and Walker,2005). This research focuses on one of the variables used in inventory management. Inventory management is important part of a company because poor inventory management can lead to insufficient inventory, such as excessive inventory, physical space, financial burdens, and the potential for waste and loss. (Lwiki, Ojera, Muginda, and Wachira, 2013). In order for a company to have a good performance, the company must be able to generate the highest possible profit at the lowest price possible.

## **Inventory Management Strategies**

The success of a supply chain business depends on the effectiveness of the inventory strategy. Without a strong business plan, the company may be in short supply or have excess inventory in hand. To optimize and meet the needs of client, these businesses should study themselves in various types of advertising strategies that best meet their needs. (Dubois 2016). This is an indication that the inventory management strategy involves optimization and improvement. There are classic and non-classic inventory management strategies.

- Classic inventory management strategies include Conventional Manufacturing Strategy (CMS), Economic Order (EOQ) and Economic Production (EPQ).
- Non-classical inventory management strategies are Material Requirements Planning (MRP), Just-in-Time (JIT) and Hybrid Push-Pull (HPP) or Lean Inventory Strategies.

However, it can be said that the old inventory management strategy is gradually being depleted by some manufacturers due to certain constraints, such as downtime and unused capacity while waiting for replenishment or due to Congestion caused by inventory surplus.

Just-in-Time (JIT) is used to refer to the movement of the material through the system and the services are delivered on time (W.J. Stevenson, 2007). In the first stage, JIT refers to the movement of materials, components and semi-finished product within the production system. (Scutter, 2014.) described as a Pull system of inventory management strategy. Similarly, Just-in-Time (JIT) could be said to coincide with theory of constraints (TOC). (Rahman, 1998) according to JIT comparative study, TOC and traditional methods indicates that it is difficult to conclude with confidence. That the system confirm that the TOC uses a drum buffer concept as a management system, which is the basic for developing a schedule that will increase productivity and reduce delivery time and avoid delays.

It also ensures on-time delivery and reduction in disruptions that require expediting. These characteristics of TOC are similar to those of JIT. Similarly, Constant Work-in-Process (CONWIP) and Kanban are general approaches to controlling Work-in-Process in JIT (Stevenson, 2007).

Materials Requirements Planning (MRP) using the computer software to manage inventory, the MRP application breaks down the inventory requirements into specific time periods to keep the production running smoothly. Although there are operating costs, MRP systems help manage plans for demand and allocate time. MRP production is what B. Scutter (2014); P. Jonsson, S. Mattson (2002) and M. Telsang (2010) also described as a push.

Inventory management strategies most companies make a profit and meet customer demand when inventory management develops effective inventory management strategies and efficiency, such as JIT. According to M. Telsang (2010) and H. Lee (2007) "MRP is a technique for determining

the quantity and timing of the dependency requirements to meet the core production schedule requirements." Raw materials, component parts and sub-assemblies are examples of dependent demand items. MRP is one of the most powerful tools that, when used properly, allows managers to achieve efficient production control W.J. Stevenson (2017) avers that the major difference in how inventory is managed is the result of the nature of the demand for those items. When the demand for a product comes from a plan for the production of certain products, as well as raw materials, components and sub-assemblies used in the production of finished products, these products have increased demand.

## Hybrid Push – Pull (HPP) Strategy or Lean Inventory Strategy

Some businesses use a hybrid fetching method to properly manage inventory. According to B. Scutter (2014), it is a success companies need a sophisticated inventory control system to track products and supplies. It is in stock with the intent to anticipate future needs accurately. This model is called Lean Costing Strategies, where companies really heavily on forecasts and stock levels are adjusted to actual sales. WJ Stevenson (2007) defines lean as a highly coordinated system. Minimal resource and cause Products or services of high-quality and lean operations are based on high quality processes in place. Quality is an important part of lean work, without the need for advanced quality lean work is not possible.

## **Inventory Management System**

Real-time inventory database that can be connected to multiple branches. It can be used to track stock of a single store or to manage stock distribution across several branches of a large franchise. The goal is to simplify tracking instead of suing all store maintenance. Additional features may include the ability to generate sales reports but the interpretation will be canceled. In addition, due to occasional theft, the system provides a way to validate inventory in stores and to correct stock volumes. (Ramlee, Henry, Chhay, 2006)

#### Concept of success (SMEs)

In business, whether business is size Medium or large, one of the things that entrepreneurs need. It is a business success in giving meaning or definition. The success of the business can be explained in several ways. It is a reflection of the growth of a business or the profit of a business and some businesses may use a goal-setting approach and succeed through the process. The results are targeted to some entrepreneurs perform business on fine arts. May consider the some of them may consider their success with the success of the new product. The criteria for determining the success of a business are manifold and success can be seen as unsuccessful in the eyes of others. (Foley & Green, 1989, pp. 1-2).

#### 3. Research Methodology

#### 3.1Research Design

This research uses inventory management strategies by interviewing, which will gather information for study purposes. Qualitative research is the appropriate method for this thesis, as it uses interviews. For this purpose, this type of research is a fundamental finding. It can receive accurate information and can easily be compared. We need to use this method because Interviews will give you the right information and can set target audience, control the volume of the target

audience. If it is a survey not able to target and difficult to control and got the wrong information. Interviews will be based on the experiences of entrepreneurs, stories or situations from experience.

## 3.2 Target Population

The target population of the study is the small business owner in Thailand, mainly in Bangkok and surrounding provinces.

## 3.3 Sample Size and Sampling procedure

Qualitative sampling techniques were used for qualitative research (Creswell, 2007). Subgroups derived from an accessible population (Mugenda and Mugerda, 1999). This subgroup was chosen as a representative of the SME in Bangkok and surrounding provinces.

#### 3.4 Data collection

The method of collecting this information is Thai and English language. Depending on the needs of the participant will choose the type of question. This information was collected from 1-4 owner of SME in Bangkok during March-April 2018.

#### 3.5 Interview

To be interviewed at company of the participant by using a digital voice recording device. Time for interview is about 20-30 minutes, Start from basic information/history (historical)/ function of business

Duration from the start of business to success a participant will be asked about the reasons for entering this business. They were asked times of success and obstacles faced during business times (inventory management). Finally, participant gives advice for people who need to start a SME.

## 3.6 Data Analysis

To do inventory will be used for data analysis and data was analyzed will be coded participant. After doing interview was completed and disassembling, segmenting, categories and rearranging the data to find relationship about strategies of inventory management to draw inference within the data set. The acquired information is compared to the table of content. In order to bring that information to explain what these strategies are for managing inventory and the data is analyzed. Expected results are: Information that can be trusted by business owners and can use the correct information to apply.

## 4. Results Analysis

#### 4.1 Introduction

The purpose of this interview is to study and analyze the SME strategy of inventory management. Including personal history, company history, advice for people who want to open a small business and the interviewed company is a company that has been in business for over 5 years. And have own inventory management within the company. The population is in the study, there are totally 4 SME owners.

## 4.2 Presentation of the Findings

The primary research questions that guided this study were "What is the inventory strategy currently implemented by Thai SMEs" and "which inventory system is used for inventory management" we conducted personal, interviews with 4 SME owners. The participants included one woman and three men. We have developed an interview question list based on a theoretical proposal. Table 1 presents related questions and topics. When the interview is over, we will take the voice from the recording of interview time to write down the alphabet so that the next step will be analyzed. We will name the participant as a company name.

**Table 1** Interview Questions, Theoretical Proposition

Participant question	Theoretical proposition	
1. What is your inventory management Strategies?	Growth and survival	
	strategies	
2. What is your inventory counting procedure?	Inventory management	
3.If don't have inventory management system it will affect to your	Other insights	
business?		
4.If you discovered an inventory error, how would you act?	Inventory management	
5.Advise the ways to run a small business?	Advice to others	
6. Have you ever seen a problem in your business?	Problem	

The question analysis led to the answer of research question and analyzed in order to find a summary of the inventory management system.

#### 4.3 Interview results

This study is part of qualitative re urch. Participants are business owners. It is divided into 4 owners and by type of company. The results can be summarized as follows:

## 4.3.1 Interviews with coffee shop owner

Question 1: What is your inventory management Strategies?

## Interview results

Real-time inventory management with the "OCHA" system to help manage and design inventory space within the store. OCHA system can reduce the cost of overstocking.

Question 2: What is your inventory counting procedure?

## Interview results

Our shop uses OCHA system to count inventory. It can calculate the goods in and out of the shop accurately and conveniently.

Question 3: If do not have inventory management system it will affect to your business?

## Interview results

If there is no inventory management, the disadvantage is sometimes there are modifications to coffee recipes, such as sweet, sweet, not too sweet, but the raw materials change, such as customers to reduce the amount of coffee. Make a coffee First, it may only lose 1-2%, but

accumulate several times, it will start to see the true volume lost. The accumulation for a long time. Coffee may deteriorate and costs of Expenditure will increase. Another problem often found in our business will be problems caused by people Like a storekeeper with a sales person may not be the same person. I do not know where to store items, such as the store at point A and product already out of stock, sales person will order product to added immediately. In fact, there is a product at point B, and the addition of the product causes the accumulation of the product to become waste and also the loss of freshness. Limit of coffee beans. When opening the bag of coffee beans must be used within 7 days if the coffee beans are ground coffee beans are only 24 hours. To maintain quality for customers.

Question 4: If you discovered an inventory error, how would you act?

## Interview results

We will focus on solving problems. Because the person who owns the business does not need to know about the whole system of business, but when the time has a problem, can determine the point for immediate solution.

Question 5: Advise the ways to run a small business?

### Interview results

Start looking at ourselves, looking at both the business owner and the customer need. For example, bringing the customer's attention or needs together in our business. At first, there will be a lot of tiredness, nothing to get within 1-2 days so you must have love in service to customer and patience.

Question 6: Have you ever seen a problem in your business?

#### Interview results

There are problems with the product that can be deterioration or degraded such as milk, in some case order milk is too much, but don't used all of milk. Make some bottles expire before using including coffee beans we unwrap it and put in a coffee grinder each day too much that make the coffee deterioration of the quality and become a waste.

Modification of coffee, Sometimes the staff confuses when the recipe of the coffee is change from the standard recipe by increasing and decreasing some ingredients appropriate proportions per cup. Such as reducing milk or adding more ingredients it makes when we serve the coffee not full in cup. This is another problem that occurs when changing coffee recipes. After the problem was found, we have found a tool that can help to solve the problem. After getting the tool and applied with the shop it can help to reduce the problem.

4.3.2 Interviews with owner of the distributor of environmental test chamber, vibration test machine industrial equipment and electronics part.

Question 1: What is your inventory management Strategies?

## Interview results

The company focuses on delivery directly to the customer. The company will only make PO and shipping invoices; company will use third parties to delivery. There will be no product storage at the company because of the high value and large size of the product, High cost of inventory. In summary, the company's strategy Is not keeping the product within the company in order to not have

to charge warehouse. The management system is to hire a third party to manage inventory and delivery.

Question 2: What is your inventory counting procedure?

#### Interview results

The company has cut the problem of storage and counting products. By providing the supplier direct delivery to the customer and reduce the chance of damage when shipping. Spare parts have a unique locker that makes it easy to count and does not have to worry about deterioration, no need to store in temperature room.

Question 3: If do not have inventory management system it will affect to your business?

### Interview results

- The cost of holding goods, such as high value machines combined with storage costs and cost of investment increased.
- Suitable storage areas are important if there is no good inventory management the problem is that the mice can bite the cable to damage the product.
- If the Spare part does not have a code number for each item, it will keep inventory and maintenance errors, for example picking the wrong nut does not fix the machine.

Question 4: If you discovered an inventory error, how would you act?

## Interview results

If the problem occurs, the machine will return immediately. The cost of shipping back to Japan will be charged (Shipping cost).

Question 5: Advise the ways to run a small business?

#### Interview results

Time Management in Businesses the most important for this type of business but the item is not a big issue specially if you work with foreign companies (Japan), Foreign companies take time seriously, Cargo must be due on time (due date).

Question 6: Have you ever seen a problem in your business?

## Interview results

There are problems with the delivery time from the manufacturer from Japan to Thailand.In some cases, transportation cannot be delivered to customers on time. Whether it is product inadequate for delivery or problem at inbound goods in the country. Another problem is when shipping the machine to customer and customer found the problem but the technician cannot be able to resolve some of problem at that time or replace the part that don't have in stock. It must return the machine to the manufacturer in Japan for modification or contact to manufacturer to deliver the parts to Thailand but It depends on case by case.

These things will make customers dissatisfaction and uncertainty in the company. It can be loss of opportunity in the market because of business punctuality is an important factor. Including support and after sales service For Spare parts, such as power cables, if unused for a long time, it will cause the wiring to deteriorate or may be bitten by a mouse and make the spare parts in stock become waste.

4.3.3 Interviews with owner of the Building materials shop.

Businesses on the tools of engineers on campus equipment such as plumbing, wiring, light bulbs, home appliances. This is the only one in this area.

Question 1: What is your inventory management Strategies?

## Interview results

Company don't have system or application to manage but use Human to manage and see how many products sold in a day. Strategy is a trend of customers in the range. For example, close to graduation day was had a facade. There was a lot of color brushes. This makes it possible to forecast the quantity of goods to be stored.

Question 2: What is your inventory counting procedure?

## Interview results

Most will not count every day but was counted during the order enter to the company in order to know how much goods within the store. It will count and order to fill.

Question 3: If do not have inventory management system it will affect to your business?

### Interview results

- If there don't system that can increase the work load and human error.
- Stock counting is harder.
- Loss opportunity to sell if you do not have the product, then you must buy from the nearest store to serve customers but loss profit.

Question 4: If you discovered an inventory error, how would you act?

### Interview results

The problem is finding the product in the warehouse is not found. The solution is walk to find a product. But this will make customers waste time. The summary is focused on solving specific problems.

Question 5: Advise the ways to run a small business?

#### Interview results

Stock planning is good and if there is a good product management system. We do not need to put them in a warehouse. Those are the money that is wasted. If the money goes to sink with goods that are not sold. To invest in other points will get better returns.

Question 6: Have you ever seen a problem in your business?

## Interview results

The problem is that the product is difficult to found or lost the items because normal products such as paint, paint brush, thinner are easier to store. But for small items such as nut, nails, rings these products will be small pieces maybe put the item in wrong place or mix with the other size and size may be different, perhaps if the seller's sales don't have time to check clearly about the size is that right. It can make the customers complain about the wrong product. Human error in the store when employee count for a long time may cause counting wrong and fill in wrong location.

## 4.3.4 Interviews with owner of Shrimp Farm

Question 1: What is your inventory management Strategies?

#### Interview results

Storage strategy When you catch shrimp, it will be paid to call the dealer. Auctioneer Who has the best price? The main factor is the temperature that must be ice to control the temperature all the time. If the shrimp in the sun without water will dry and pale, the price of shrimp will fall.

\* No warehousing system. It will work by catching shrimp and then people will take over immediately. This is the strategy of the company.

Question 2: What is your inventory counting procedure?

## Interview results

Each product count is measured in weight. It saves more time than the kilogram and the basket weighs about 20 kilograms (the number of baskets \* the total weight of the shrimp). In order to prepare packing and ice for storage to the cargo.

Question 3: If do not have inventory management system it will affect to your business? <u>Interview results</u>

If there is no good storage plan. There is a lot of impact because the shrimp are very likely to die, such as the time to catch shrimp, the first is the temperature. To store If the temperature is not determined it will cause the shrimp to die. And if at this point, shrimp died. delivery of goods will cause problems. If it is not good or shrimp is not standard. The price of shrimp will fall. Therefore, it should be time management and good storage is important.

Question 4: If you discovered an inventory error, how would you act?

#### Interview results

If the time to release shrimp to the problem. We will stop and cut at that point. If you continue, it will cost you time and money too. But sometimes the product error is not necessarily to throw away, there will be some that can be separated for sale at a cheaper price. It's better to waste less in that.

Question 5: Advise the ways to run a small business?

#### Interview results

Must understand the whole process of what we want to do business. From Origin to Destination Details on various aspects such as weather, but these important components will depend on the type of business individual. But the main thing that everyone must have.

- Understand what we are doing.
- Solve problems well

Question 6: Have you ever seen a problem in your business?

#### Interview results

Climate and weather this is a major problem for Shrimp farm. Therefore, it is impossible to anticipate the weather this will causes shrimp died or some shrimp is not having a good health. When shrimp is dead or infected, we cannot sell it out it must bear with the higher costs. Including food and

medicine for shrimp and the weather in Thailand is hot in every day that make some shrimp died, food and medicine that we prepared for the shrimp was too much. It requires more storage and longer time for storage it can deteriorate.

Table 2 Interview Summary

Participant question	Summary		
1.What is your inventory management strategies?	Interview summary it is a small company, no strategy or system because the investment in the system may be overpriced. Some small companies have introduced a cheap system and managed their inventory that can calculate demand and supply for inventory.		
2.What is your inventory counting procedure?	Inventory counting procedure for companies interviewed 3 in 4 Used to count the goods by themselves not in the system to count. Because small companies do not want to invest in the system but most often there are problems with human error often.		
3.If don't have inventory management system it will affect to your business?	From the conclusion of all 4 small companies. If there is no warehouse management the main effect is the cost of taking care of the inventory in excess of the need and if this is due to the results of the survey will accumulate the problem until it reaches the stage of loss.		
4. If you discovered an inventory error, how would you act?	The interviews of the 4 companies as follows: 3 out of 4 will use a temporary solution for an unexpected problem. The problem is solved so that in the future will not have to face this problem again or can prevent the problem before. Because small companies have no experience in various problems. Because small companies have no experience in various problems. Companies have to face the real situation before they can take the problem to develop their strength of the company.		
5.Advise the ways to run a small business?	Overall, most of the recommendations for starting a business from passion. And management of inventory. It depends on the size and location of the company. Because the type of product is different. So, the storage is different.		
6. Have you ever seen a problem in your business?	From 4 types of SMEs (companies / businesses) That we interviewed (Coffee shop, environmental test chamber, vibration test machine industrial equipment and electronics part, Building material shop, Shrimp farm)  Every business has a different internal problem, depending on the type of business and product but there is one use the tool for integrated with the experience of human to help the work force and reduce work load of employee. It will alert every time that product arrives or product is released, can calculate the demand and supply that will occur in the future. This can reduce some human errors.		

## 5. Conclusion and Suggestions

## 5.1 Summary of findings and discussion

In summary, this research explores patterns and strategies of SMEs in the inventory management.

So that the results of the research can be used to study and develop the product management system for small business and new entrepreneurs. To respond the needs of buyers and sellers can also reduce the lost opportunity to sell products. Such as a good product management. Stocking will be enough until the next time. This research shows that small business, new business owner has a personal style to manage your own goods. They do not rely on the management system to make it easier. Facts come from cannot access the system, in this situation not have many problems making most of the small entrepreneurs for inventory management. It is more self-management, but we recommend this to use tools because It is necessary for people to start a business because tools can calculate demand and supply for owner business this mean tools can reduce human error, no need to guess demand and supply and using tools will make the business grow faster. We recommend using tools to manage inventory.

## 5.2 Suggestions for Research

Entrepreneurs need administrative good corporate governance innovative marketing strategies to meet the needs of customers at all times. Effective management of human resources should do more business research. Researching small and medium sized businesses for marketing strategies can be applied effectively and the interview method should be used in the same group, because it can be compared more clearly and accurately confirm the results of this study. In addition, development is also an area of interest for future research.

#### 5.3 Further research

The limitations of this first research are still many missing variables. Based on current research, including behavioral variables such as inventory management capabilities that still need to be studied and the combination of several important questions will make it easy to explore in future surveys. There is an increased burden but raising questions will help increase understanding of inventory management also should look at many dimensions, including short-term / long-term research. Looking at creativity as a competitive strategy, SME's competitiveness is the area to be monitored. A study of elements related to innovation and resources.

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