

A study of inventory management issues in large scale food canning



**ASSIGN
BUSTER**

1. 0 INTRODUCTION

Background of the Study

In this study the researcher is aiming to proffer solution to challenges in inventory management in the manufacturing sector through the application of Supply Chain Management principle, Inventory management theories. The specific focus of this study will be on the inventory management issues in the canned food industry such as the manufacturing of canned tuner flakes by the Heinz Group and other such related activities. The field of Supply Chain Management has been the subject of different definitions however the same. Harland (1996) is one of the forbearers in studies relating to supply chain management and considers the subject as the activities involved in managing interconnected networks that are necessary in the provision of products and services. He names some of these activities to include all movements and storage of raw materials, work in process inventory and finished goods from one point considered to be the origin to another considered to be the point of consumption. In the view of Lambert (2008), the subject of supply chain management involves the “ design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally” (Larson & Halldorsson, 2004) while Mentzer et al (2001) also views the subject as “ the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance

of the individual companies and the supply chain as a whole” (Mentzer et al, 2001).

The theme in these definitions is quite clear that supply chain management ranges from suppliers to customers in the whole process, including outsourcing, manufacturing distribution, inventory management, transportation, warehousing, customer service, etc but the most important of them is the relevance of a credible and robust supply chain management function to large scale manufacturing organizations in the business of canning products in such a way that it is capable of proffering solutions to challenges in inventory management in such large scale manufacturing companies. It is against this background that this study is considered essential and worthy of further studies

Research Problem

In the supply chain, from suppliers, manufacturers, wholesalers to retailers, every element has inventory to meet a wide range of uncertainty to ensure the normal operation of the supply chain. The level of supply chain costs affects the profitability of various enterprises in the supply chain network, and the cost of inventory is an important part of supply chain. Inventory in traditional enterprises and under supply chain management are different, and these differences reflect the impact on the inventory by supply chain management. In the traditional management mode, inventory control focus on the optimization of the cost of a single stock and determine the economic order quantity and order point from storage costs and order costs. From the perspective of inventory, this inventory control method has some

applicability, but from the perspective of the whole supply chain, inventory
<https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

control in traditional management mode has congenital defect: Firstly inventory control lacks of cooperation and coordination. In the traditional management environment, business units are separate, their missions and objectives are based on the maximum profits. But inventory control under supply chain management, its premise is that members among the supply chain can cooperate and coordinate seamlessly and smoothly according to certain standards of service (Cachon& Fisher, 2000).

-

Thus the whole supply chain can be in step with the requirements of clients to optimize the inventory to adapt to the complex and volatile market environment. Secondly the performance appraisal scale of inventory control has limitations. Under traditional inventory control, evaluation criteria are based on a single enterprise or sector, evaluation index is not related to the overall performance of upstream and downstream enterprises. Only an indicator of an assessment which cannot state the control situation of total logistics cost in enterprises. Thirdly inventory control policies are too simplistic. No matter manufacturers or logistics, the purpose of inventory control is to ensure that business continuity as well as supply chain operations and to cope with uncertain demand. Most of the traditional inventory control strategy is for a single enterprise and basically uses information from the enterprise interior. Many enterprises are unified for all items of inventory control strategy; hence it's difficult for them to reflect supply and demand uncertainty. Fourthly low information transmission capacity of inventory; information system plays an important role in supporting in inventory control of enterprise (Cachon& Fisher, 2000).

Therefore, supply chain inventory management study is significant in helping enterprises to improve service levels, market reaction speed and to achieve low operating cost and how to establish effective inventory control methods which reflects the ideas of supply chain management. Establishing the whole concept of supply chain management, improving supply chain information sharing between enterprises, optimizing implementing measures of inventory control and structuring harmonious and cooperative relations can promote optimization of chain inventory management ideas and methods to improve supply chain inventory management efficiency. A critical look at the Heinz group manufacturers of the famous John West tuna flakes and the Star Kist Tuna reveals that the company is assailed with the different challenges of inventory management as stated above. The challenges of the Organization is evident in the frequency with which it changes its inventory management policies from whether to employ a centralized purchasing system or decentralized purchasing system to the ability to manage the inventory along the production process. It is therefore not surprising that just in three years the company has had to dispense of the services of two Inventory Managers and have placed an advertisement on their website in search of a person who will be able to interpret the inventory management challenges and design appropriate strategies to ensure that the company does not lose unnecessarily in its business activities that pertain to the management of raw materials, work in progress and finished products.

In this paper, basic theory of supply chain management will be detailed and Vendor Managed Inventory theory, Joint Managed Inventory theory and JIT concept of decreasing inventory will be raised. It is important top note that

<https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

the above discussions would be done using examples from Heinz group in order to make the issue as simple and practical as possible.

1. 4 Research Aim and Objectives

The importance of every research is measured by the effects that the aims and objectives would have on the general wellbeing of society. It is the only justifiable reason which resources should be expended on the venture. This study is set to contribute significantly to the field of management in general and the Supply Chain management in particular by proffering solutions to challenges in inventory management in the manufacturing sector through the application of Supply Chain Management principle, Inventory management theories. In the pursuance of this aim the researcher has set up measurable objectives. The objectives of this research include:

To give an overview of various existing supply chain in the manufacturing industry.

To examine the problems and prescribe solutions to Inventory management along Supply Chain in manufacturing.

Analysis the problem with inventory management and its impact on organization performance.

To study how to use MIT, JMT and JIT concept to reduce inventory.

To examine how Supply Chain-inventory management can be carried out towards the achievement of competitive advantage of companies.

To study case of reference to improve inventory problem.

<https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

1. 5 Organization of the Study

In order to aid users of this study in following the logical sequence of ideas and principles inherent in this study, the researcher has grouped the work into five chapters namely the introduction, the literature review the methodology the data analysis and the conclusions. In the first chapter which is called the introduction, the researcher outlines the general background within which this study is taking place as well as the research problem which this study seeks to find solutions to. In the next section the researcher discusses the aims aim and objectives of the study as well as the relevance of the study. The chapter ends with a highlight of the structure of the dissertation. In the second chapter of the study the researcher discusses the depth of academic literature or secondary information that has been collected with regard to the analysis based on supply chain management of inventory management. The study is divided into specific sections along the objectives of the study which includes an overview of various existing supply chain in the manufacturing industry, inventory management along Supply Chain in manufacturing, analysis the problem with inventory management and it is impact on organization performance, how to use MIT, JMT and JIT concept to reduce inventory, Supply Chain-inventory management towards the achievement of competitive advantage of companies as well as cases of reference to improve inventory problem. The third chapter is called the methodology chapter, in this sector, researcher utilizes case study and secondly data. The fourth chapter is analyzing data and discusses data. In the fifth chapter the researcher draws some conclusions from the findings of the study and makes disclosures with regard to the implication of the study for industry.

<https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

2. 0 LITERATURE REVIEW

2. 1 Introduction

In the first chapter the researcher discussed the background of this study and emphasized the relevance of this study as well as the aim and objectives of this study. The chapter also concluded on the way the dissertation is structured. In this section of the dissertation, the researcher discusses the nature, characteristic and messages of the different forms of academic and non academic literature that has been gathered to support the findings of this research. This analysis is important to note that in gathering this secondary data the researcher was guided by the fact that more value is placed on sources from credible academic books and journals.

2. 2 Trends in Current Supply Chain Management Practices

Simchi-Levi (2007) shows supply chain management practices exist in both service and manufacturing organizations even though he concedes that the practice is more pronounced in the manufacturing set up than in the service delivery sector. It is this view that has highly influenced academic and non academic studies to be positively bias towards the practice as it is carried out in the manufacturing industry. In the original work of Kumar (2008) aimed at presenting an overview of various existing supply chain in the manufacturing industry, he was emphatic that disclosure of a number of issues that are of major concerned to the field of supply chain management and its practice among contemporary manufacturing organizations is important to understand the intricacies of the developments of this field in a globalized economy. His first observation which is accordingly endorsed by Ketchen (2006) in his own studies relates to the changing phases of the

<https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

management function that is directly related to the management of supplies. In that work the author was of the view that the nature of supply chain management has changed considerably due to the discovery of new models developed to make the supply chain management function in general and the management of inventories in particular much easier. Some of these new techniques which have largely emanated from researches of Japanese management theorist include the Total Quality Management (TQM), the Just in Time Philosophy and other similar ones.

It is also important to note that different issues that have contributed significantly to the different dimensions that are now seen in the practices and the activities involved in the supply chain management. Inventory management have been seen to be a direct result of using computers in the management of inventory and the modern view that inventory management is an integrated process of different functional areas. He concludes his work that in modern manufacturing, the supply chain is not just a management activity but a functional pre-requisite for optimal business profitability.

Another study into the overview of various existing supply chain in the manufacturing industry is the work of Kashia (2000), he claims modern supply chain has become more complex with the introduction of computer and computer related software. But shares in the opinion of Kouvelis (2006) that the advent of computers into supply chain management has also broaden the different forms of the practice making it difficult to present a generally acceptable type or forms of supply chain management.

Simchi-Levi (2007) is of the view that the above although he introduction of computer into the field has not taken away the fundamental principles that underline the supply chain management practices with which the different classifications are made and posits that in his view the four forms of supply chain management presented by Kouvelis (2006) is still popular and can be seen to be the fundamental forms or types of supply chain management practices that is being carried out whether by the aid of computer related software or not. These four forms of supply chain management include pipelined structure, late customization, divergent structure and convergent structure. He further stirs the controversy of suggesting that modern computer based supply chain management models have in one way or the other been influenced by these four forms of supply chain management and continues to serve as their backbone even though his views are also criticized by Ketchen (2006), considered to be one of Japans foremost supply chain management consultants. In this work the researcher concludes that an overview of various existing supply chain in the manufacturing industry enforces the position that the supply chain management structures in contemporary manufacturing depends on the type of product that is being produced and the sequence of steps in the supply chain process. Ketchen provides an explanation of the differences in the operations of the four forms of supply chain management by emphasizing that in relation to the pipeline structure it reflects that form of systemic, strategic coordination of the traditional business functions and tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of “ improving the long-term performance of the individual companies and the supply chain as a whole” (Mentzer et al, 2001), which is <https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

designed to ensure that the products that are produced passes through a set or series of production or assembly stages in mass production or continuous manufacturing. In this way he was enforcing the findings of the work of Huang, C. H. (2008) who identified that in different parts of China the form of supply chain management was largely related to this fact. He also noted that in supply chain management systems in parts of India and Pakistan this practices was very predominant just as he found out similar trends of this form of supply chain management in parts of Brazil and Russia. He also indicated that business or manufacturing entities that were engaged in mass or continuous production were likely to employ this method as it facilitated the nature of their work. Even though he does not prescribe it as the best strategy for the management of supplies in that sector, his overview suggest that it is a preferred option in such instances. In his definition and exposition on the late customization form of supply chain management that it was that form of supply chain management “ whereby the initial stages of the production process is designed to produce standard items which are assembled and customized to specific requirements either in local plants or in the distribution process” (Ketchen, 2006). In this view the manufacturing of Personal computers, IC chips, disk drives, laser printers, electronic gadgets, etc. fall into this category. In further explanation he asserted that in late customization since the products variety are obtained in a late stage during the production process it was important to maintain inventories at a subassembly level and in customization facilities or plants which in turn assembles or configures these rapidly into desired products. In relation to the supply chain management system that is considered to be a diverging structure in nature, it is argued that “ customization starts in early

<https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

production phases” (Ketchen, 2006). In this way he was emphasizing the position that in this form of supply chain management different varieties of finished products are produced with a limited number of raw materials or components and argues that in the production of electro-mechanical systems such as motors, textiles, metal fabrications and chemicals, it is imperative to employ this form of supply chain management system. In detail on the last category of supply chain management systems which he classifies as the converging structure the renowned Japanese management theorist asserted that it is the practice whereby series of assembly operations are carried out in order to obtain the final product. He posits that in the construction of aircrafts and other construction industries the employment of this form of supply chain management cannot be overlooked. Another overview of this has been done by Huang (2009) whose work was focused on evaluating other features that are adopted or incorporated into supply chain management processes in order to ensure that it was successful. In arriving at the conclusions of his findings he investigated supply chain management practices in one hundred and twenty different companies within the manufacturing sector for a period of two years each. In order to be able to build conclusions that could reflect the generalist perspective he was careful in ensuring that the selected study samples or companies had different background in industry. In this way he ensure that he had manufacturers of beverages, aircrafts, automobiles, locomotives engines, food supplements, furniture, stationery product, and other forms. In the end he developed his theory of supply chain and business process integrations as a complement to the work of Ketchen and other such researchers.

<https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

In the study of Francis (2009) he asserted that the evidence supplied by the former on the schools of thought in supply chain management has served as a basis for the development of modern supply chain management practices in the whole of Japan, China, Brazil and other areas that are considered to be embracing industrialization to a large extent. In the original work of (Deming, 2003) he asserted that evidence gathered from his studies suggest that successful supply chain management systems which is measured by the successful implementation of the principles suggested that there was a there is a gradual change from managing individual functions to integrating activities into supply chain process that are considered to be key. He presents that the purchasing department places orders as requirements are forwarded by the department in need of them. In order to consolidate the integration process the marketing department or in some instances the production or purchasing department respond to this demands by getting in touch with the different suppliers of the same supplies and employ appropriate strategies to select the best offer for the organizations (Drucker, 1998). When such a process is concluded the process is continued by the finance department who make effort to respondent to the marketing or purchasing departments request for payment after which the goods are delivered to the store for onward transfer to the needing department. He concludes that in all of this process the work of the different departments are defined in such a way that it is integrated and information shared between supply chains partners can only be fully leveraged through process integration.

This position has also been found out by Lambert and Cooper (2000) in his studies of the modern trends in supply chain management of inventories in the industries in the United States of America. According to his findings that were carried out within a period of three months he noted that supply chain business process integration involves cooperative work between buyers and suppliers, joint product development, common systems and shared information. In the work of Douglas (2008) he also made a categorization of the functions of the supply chain of inventory process as underscored by Lambert in his previous studies (Fu et al, 2000). He reckon that an appreciable supply chain of inventory process should have customer relationship management, customer service management, demand management, order fulfillment, manufacturing flow management, supplier relationship management, product development and commercialization and returns management at its centre and around which all supply chain activities must revolve. Chwdhury (2002) on the other hand is of the view that the descriptions by Lambert and his disciples are too consuming and may not be easily misunderstood by very simple organizations and presents another supply chain management process which places management of demand, management of lead time, tighter feedbacks from customers and market as well as customer level forecasting. He thus conclude his work by emphasizing that a simple view of supply chain management of inventories should incorporate customer service management, procurement, product development and commercialization, manufacturing flow management, physical distribution, partnerships and performance measurement (Heung et al, 2000). In the next section the researcher will expound on these issues in Supply chain management of inventories and how they work in harmony to <https://assignbuster.com/a-study-of-inventory-management-issues-in-large-scale-food-canning/>

ensure that the functions is able to deliver the best form of supply inventory management.

2.3 Inventory Management and the Supply Chain

In the last section, there have a simple view of supply chain management of inventories should incorporate customer service management, procurement, product development and commercialization, manufacturing flow management, physical distribution, partnerships and performance measurement. Russill (2007) discusses the first level of inventory management which he considers to be the procurement process. He is of the view that an understanding of inventory, its nature and its importance is very crucial in underscoring the fundamental elements that are inherent in inventory management. He endorsed the earlier position held by Ballou (2009) that nowadays, manufacturing enterprises facing fierce competition in the market, customer requirements changeable, raw materials procurement cycles is long, therefore more and more enterprise pay attention on inventory and inventory management. In explaining the intricacies of inventory management along the supply chain, he asserts that in manufacturing enterprise, inventory consists in products, raw materials, finished goods and emphasized that inventory exists to prevent the occurrence of out of stock, however inventory have cost, especially the raw material inventory required large amounts of cash flow, hence, reduce raw material inventory and reduce the cost of inventory is very important for manufacturing enterprises. It is for this reasons that the management of inventory is considered to be extremely crucial as there are a number of challenges that must be overcome and managed in such a way that it will

deliver the expected. In the work of Slack et al (2007), the focus was on the challenges that are involved in the management of raw materials. He is of the opinion that the major challenge in the management of raw materials is the choice of the strategic partner or supplier who can be depended upon to supply the materials as well as the extent to which raw materials must be stocked in the warehouse to support production operations. In his assertions he emphasized that in the processes of selecting the supplier a number of factors must be considered to the extent that the supplier should be the one that provides the best materials and at the most minimal prices possible. In this connection he asserts that the establishment of a procurement procedure that hinges on open tender is advisable as it forces prices down to the barest minimum.

Even though this position is held by Bojanic (2007) in his contribution on the challenges of inventory management that entails the choice of a supplier he is of the view that in the quest for minimum prices it may not be possible to employ a tendering procedure all the time but presents scenarios to support the view that in most instances the outright selection of a supplier is imperative. In the work of Tyndall (2008) his emphasis on selecting a supplier had to do with how the organization will be able to sustain the continuous flow of raw materials from the supplier. By this position he was underscoring the need for strategy in the procurement of raw materials and insists that every company that is worth its work must ensure that it has strategic suppliers that it can depend on at all times to supply at the most competitive prices. In furtherance of this he is of the view that a business organization must above all look out for suppliers whose credentials are

known and have to capacity to provide at all time with good payment terms. Other researchers such as have also discussed the challenges involved in supply of raw material by focusing on the advantages and the disadvantages of the centralized and decentralized purchasing systems that are employed to purchase raw materials in the supply chain management process. He explain the centralized system to mean the system of purchases whereby the specific department that stands in need of a particular raw material carries out its own form of purchases while the system whereby a separate department is mandated to carry out the purchases of the raw material is called the decentralized purchasing system. He is of the view that the business would have to identify which situation will require centralized approach and which one will require a decentralized approach and conclude that in all instances the decision should be carried out in such a way that the company would be the ultimate beneficiary.

In the work of Ofei (2007) his focus was on the problems that organization face in term of what constitute the best level of stock that must be kept and at what level should business reorder their new stock. This is classified in the field of inventory control as the minimum stock levels, maximum stock levels, re-order levels and other levels that are crucial to assist management decisions. In his view these issues are crucial to the extent that the organizations inability to manage them appropriately can have huge repercussions on the business in terms of cost. He emerges from the point of view that when organization maintain a level of inventory that is very low, it will result in inability to meet production schedules which can further lead to inability to meet the demand of consumers and sudden lucrative business

opportunities. In that sense the business organization would be considered as one that is unable to provide what the clients need at the correct time. In the same vein maintenance of a small amount of inventory can lead to very dire consequences in circumstances where there are immediate shortages. The advantages that they put forward for this is the fact that the business would be able to use funds saved for other operational issues. In the same light the management of inventory is highly interested in the highest level of stock that must be kept in the organization due to the fact that the purchase of inventory can lead to locking up capital in stock especially in an environment where demand is on the decline.

Among the advantages that Mentzer (2001) puts forward as affecting the maintenance of a high level of stock is the cost of storage and space that are associated with this. In the same vein the tendency for some highly perishable goods to go bad hence resulting in huge losses as it is the case in a number of instances is a direct result of this fact. In an earlier study by Russill (1997) where he concludes on the practices of setting the reorder stock levels, the minimum stock levels and the maximum stock levels, he identified that the practices within the sector required that these stock levels be set in relation to the demand of the main products as well as the extent to which there are fluctuations within the market as well as the financial resources and space available to the organizations. He strongly advocates that mere knowledge of these factors are not noble enough and asserts that a business organization must systematically collect data and analyze its different dimensions and implications over a period of time before setting these levels. In his study he noticed that just as Simchi-Levi (2007) found out

that business organizations within the same industry copy the vision and mission statements and only change the words, there were a number of situations where organizations working in the same industry copy their different stock level from each other and warned that that can be dangerous as business circumstances can be entirely different. He concludes his studies by emphasizing on the procurement process as well as the transfer of raw materials to the various cost centers from the store.

In that conclusion he was categorical in stating that the procurement prices is a strategy and if business refuse to see it that way then there is a tendency not to see the importance of it. In this view he asserts that strategic plans are drawn up with suppliers to support the manufacturing flow management process and the development of new products. He concludes his work by making a very crucial statement to this effect where he asserted that “ the purchasing function develops rapid communication systems, such as electronic data interchange (EDI) and Internet linkage to convey possible requirements more rapidly. Activities related to obtaining products and materials from outside suppliers involve resource planning, supply sourcing, negotiation, order placement, inbound transportation, storage, handling and quality assurance many of which include the responsibility to coordinate with suppliers on matters of scheduling, supply continuity, hedging, and research into new sources or programs” (Francis , 2009). In a related study into aspects of inventory control which requires effective management Russill (1997) of the Chartered Institute of Purchasing Supply (UK) underscores the importance of partnership, communication and logistics, stock control and cash flow issues in inventory management. In a

study of the partnership of Wal-Mart and Procter & Gamble which dates back to the 1980's in which he emphasized on the importance of partners in managing inventories he said that the two giants built a software system that hooked P&G up to Wal-Mart's distribution centers. When P&G's products run low at the distribution centers, the system sends an automatic alert to P&G to ship more. In some cases, the system communicates down to the individual Wal-Mart store, allowing P&G monitor the shelves through