CONSIDERATIONS ON STOCK OPTIMIZATION

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Abstract

In order to carry out its activity in optimum conditions and achieve its goal, either to develop a product, to do a job or perform a service, any entity must maintain a balanced level of stocks of raw materials and materials. However, very careful attention should be paid to the stocks' level, since this level should not record values too high, or too low. These values lead to overstocking or stockouts situations, which should be avoided. The blockage of liquidity and the deterioration of raw materials and materials stored over a long period of time are the main consequences of overstocking, and, among the consequences of the stockout we can list: discontinuation of business, which may mean diminishing profits but also loss of customers' confidence through termination of contracts. In order to achieve the optimal stock level, we recommend an efficient administration of this activity, which implies the implementation of a well-designed information system that provides information at all times to the management and the supply department and, at the same time, effective management, since it has consequences on the company's profitability and requires good communication with both the internal and external environment. We aim to focus in this study on the factors influencing the achievement and preservation of an optimal stock level, the importance of safety stock, the role of stock administration and inventory management within an entity.

Keywords: stocks, inventory management, efficient management, information system *ext,*

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1. Introduction

Throughout this study we aim to answer the question "What is the optimal level of stock?"

Stocks are defined as part of the current assets, materialized by the existence of quantities of materials found in the administration of entities, in warehouses or storehouses, materials that provide for the activity under normal conditions. They are necessary for the entities regardless of the specific nature of the activity carried out: exploitation, production, trade etc., which is the reason for their setting or existence.

Inventories/stocks are current assets held for sale during the ordinary course of business, being produced for sale in the process of operating the activity or as raw materials, supplies and other consumables that are going to be used in the production process or for the provision of services [7].

The existence of stocks is motivated by: ensuring the continuity of production process; savings made from reduced costs on order placements and transport; discounts received as a result of the purchase of certain quantities; preventing stockouts.

The importance of stock level is due to the fact that both producers and consumers have the common goal of timely delivery of products and services, so there should be no stock breakout. However, we need to acknowledge that the existence of a stock leads to the recording of additional

costs for the entity, respectively storage costs, which consist of the total expenses incurred by the entity during the storage of material resources in stock: costs related to storage, insurance, damage, depreciation, fixed capital cost, with the possibility of investing this capital in other assets which could be beneficial to the entity. For raw materials and materials to retain their properties, they must be stored in specially designed spaces able to provide optimum storage conditions to prevent their degradation and alteration.

For each placed order, the cost of delivery is equal to the product of the value of each order and the unit cost of the order.

While supply costs are high in the case of stockout, because supply cannot be made in times when prices are low, the storage costs are high in case of overstocking because there is a risk of stock depreciation or deterioration; in this case, we can benefit from the price reductions granted by suppliers because we can make the supply during the discount periods.

We consider as an optimal stock level the one at which a maximum profit is obtained from the sale of production with a minimum of supply and storage costs or the level at which production is not interrupted, i.e. each phase of the production process is completed, and, considering the interruptions that may be caused by lack of materials and raw materials, the placement of orders must be made in accordance with their consumption.

Without the existence of inventory, there would be no fluent production and sales process but in order to optimize the level of stocks, we must constantly monitor it on all phases of the production cycle and on every workstation, otherwise the stocks' level will be reduced and the activity will be more efficient, but with the condition of a detailed planning and rigorous control.

In order to avoid stockouts, we must always have a minimum stock to ensure that we operate under normal conditions, i.e. a safety stock, but for avoiding overstocking, we should avoid excessive stockpile that can negatively impact our activity: blocked liquidity, loss due to damage to materials, high cost of storage. That is why we must not be influenced by the sales policy used by some suppliers, namely to purchase a very large quantity of materials, only to get a discount, because that reduction can be much less than the loss due to overstocking. We recommend ongoing negotiations between customer and supplier, preserving good relations between them, relations which imply compliance with certain principles, respectively the products delivered meet the qualities required, the prices set at the time of placing the order are complied with, and the quantities ordered are the same with those delivered, neither smaller nor larger.

There is a category of enterprises that do not have stocks; they work only on orders' basis, this category including a part of multinationals.

2. Factors influencing stock levels

There are a number of factors that influence the size and dynamics of inventory/stocks, of which: regularity of deliveries, respectively supplies; length of time required to complete the production process; negotiated prices with suppliers, respectively customers; minimum quantity accepted by suppliers to be delivered; term of validity or warranty of finished products; conditions offered by the storage facilities; climatic and natural conditions.

The inventory is updated after each supply of raw materials and materials, and this supply can be made at long intervals of time with large quantities or at short intervals of time with small quantities; in both situations we have advantages and disadvantages.

If we opt for long-term supply, we have the advantage of reducing the costs of launching and delivering orders, and as a disadvantage, we can mention the possibility of degradation of raw materials and stored materials.

In the case of small supplies at short intervals, the main advantage is to reduce property losses, but the costs of launching and bringing orders are increased, and the possibility of benefiting from price reductions granted by suppliers on the quantity supplied is almost non-existent.

A major factor leading to stockouts is the late delivery by suppliers; to avoid these situations, which are quite common, we suggest setting up a safety stock, whose main purpose is to ensure the contingency of raw materials, materials and products, as appropriate, that are necessary to carry out the activity without interrupting any phase of the production cycle and implicitly honoring orders to customers.

We recommend that the level of this stock be as small as possible so that its maintenance costs are minimal. The existence of safety stock is motivated by the fact that the variations between real demand and forecast demand are inevitable because it is almost impossible to predict in 100% the quantities of raw materials and materials required, taking into account the possibility of increasing or decreasing customer orders. Due to the existence of the safety stock, the customers' credibility can be maintained.

3. Stocks Administration and Management

The role and importance of inventory management is due to the following facts: the inventory field is the most dynamic field of an entity's activity; it involves a large amount of financial resources due to the high level of transactions; it raises significant problems regarding how to use and capitalize on their potential [10].

In terms of inventory management, an economic unit should be based on research, depending on the need and intensity of consumption, establishing a balance between the frequency of purchases and the stocks' fixed physical and financial assets, whose preservation at safety level must protect against the risk of stockout.

Entities need, in order to maintain an optimal inventory level, an effective administration, involving the implementation of a well-developed information system and the existence of an efficient management.

Inventory management involves a continuous monitoring of the stocks' volume and structure, as well as a supply activity with the necessary quantities for normal conduct of the business.

The evolution of the inventory level is interesting both from the point of view of the producing entity, which is interested in keeping this level as small as possible, and from the recipient entity perspective, which has the interest to reduce as far as possible the risk of stockouts, in order to be able to meet customer requirements at any time. The risk of stockout is reduced when assets are high.

Positive results achieved by the entity are partly due to an efficient management of stocks, namely: the targeted sales plan has been fulfilled; there were no overstocking or stockouts; transport costs have been reduced; relationships with suppliers, respectively customers, have been improved and maintained; the development and delivery of superior quality services and products have been achieved; storage conditions have been improved by equipping warehouses with inventory items and fixed assets necessary to keep stocks in the best possible condition.

The optimal level of stocks can be achieved by meeting the objectives of inventory management:

- The production process has continuity, there are no disruptions in its phases by timely detection of the need for raw materials and materials to be ordered, so as not to get into the situation of stockouts;
- Maximizing sales through customer satisfaction due to the quality of the delivered products;
- The existence of a operative and efficient information system that provides information on stock levels;
- Minimizing storage costs;
- Implementation of a simple, operative, efficient, and accurate information system that provides information about the status of the storage process.

In the specialized literature we come across several definitions of the information system, of which:

1. All the methods, procedures and means used in the information process, which are the integrated set of operations regarding data collection, transmission and processing, systematization, analysis, preservation and utilization of information [9];

2. A set of human and capital resources invested in an economic unit to collect and process data necessary to produce information that will be used at all decision-making levels of management and control of the organization's activities [8];

3. The set of data, information, information flows and circuits, procedures and means of information processing designed to contribute to the establishment and achievement of organization's objectives [6].

The main purpose of implementing an information system is to provide each user, according to his / her responsibilities and attributions, with the information necessary to make the right decisions in the decision-making process during the activity to achieve the proposed objective, avoiding stockouts or overstocking.

Owners and shareholders benefit from the advantages of an information system by: issuing timely reports on the current status of stocks in warehouses; issuing reports on product turnover in and out of the warehouse; managing the entity by providing information and planning and control tools for organizing future activities; saving time in optimizing the use of storage space for the administrative compartment.

Information has become very important, not just the information provided by an information system but also that obtained from other sources, which is necessary due to the pressure of market competition and the need for market and customer satisfaction.

The information influences the decision made after identifying the problem and the causes that hinder the achievement of the proposed objective, i.e. reaching the optimum inventory level, thus any information gathered should be used in its own interest.

Information provided by the information system combined with the one provided in the financial analyzes gives us the opportunity to know the volume of supplies and deliveries each month of the previous period, so we can make forecasts based on these orders.

Effective inventory administration is also the result of an efficient management.

There are several definitions of the notion of management in the specialized literature, of which we mention:

1. The conscious process through which individual and group action is coordinated to achieve the organization's goals [3];

2. Effective and efficient integration and coordination of resources to achieve the desired goals [4];

3. the process of obtaining and combining human, financial and physical resources to achieve the organization's primary goal - development of products and services desired by a particular segment of society [5] .

Management is effective when the entity manages to avoid or overcome unfavorable situations, this being possible if it succeeds in: determining the problem as soon as possible; specifying clearly and accurately the purpose that we are pursuing; identifying the means of achieving the goal; issuing and implementing decisions and, finally, evaluate the results of the decision and compare with the objectives set at the time the problem was identified. As part of management activity we must underline the inventory management, which involves determining the optimal amount of stocks to be held, the time when a new supply should be made but also the necessary quantity to be supplied.

The results of efficient inventory management consist of: increasing the stock turnover rate; achieving a balance between stocks' level and customers' demand; holding stocks in storage for a

time as short as possible; reducing the amount of damaged stocks; the absence of stockout situations, which could result in stopping the production process and implicitly loss of sales.

We cannot have efficient management if we do not have a competent manager who is able to carry out the objectives of the entity, and it would be preferable for the manager to aim for perfection.

The manager must team up with his subordinates, coordinate them, get to know them, but first of he must know himself really well and want to achieve success with the team.

The enterprise's profit depends to a large extent on decisions made by the management, an unfavorable decision made before a strict analysis of the quantity required, i.e. the purchase of an excessively large stock, leads to the recording of increased holding costs that will negatively impact the profit; the purchase of a small quantity of stocks can lead to the interruption of the production process that affects and influences the volume of sales and, implicitly, the profit of the enterprise.

In the decision-making process of a manager, the information provided by the financial statements is important. Qualitative features are the attributes that determine the usefulness of the information provided by financial statements on each patrimonial element and on the movement and management of stocks. The four main qualitative features are: intelligibility, relevance, credibility and comparability [2].

Another important factor for ensuring the success of a manager is good communication with both internal environment and external environment. In the communication process it is important to choose solutions at the right time; in practice it is preferable to find a good solution in a timely manner, rather than a perfect but late solution. In the process of communication there must be flexibility, ability of memorizing and transmitting ideas, but also of using an elevated language which is, at the same time, understandable [1].

Conclusions

At the beginning of the study, we wanted to answer the question "What is the optimum stock level?" We believe that during this study we have made the points needed to understand how the inventory level is influenced by effective administration, an information system and an efficient management applied by a manager able to achieve its intended purpose.

We believe that a cause that provokes both situations, overstocking as well as stockouts, may be the carelessness and disinterest of the staff directly responsible for the supply and sales of raw materials, materials or commodities and in these situations poor management may be invoked. Other causes may be: weak information system; lack of safety stock or seasonal stock; poorly qualified staff, etc.

To avoid overstocking, we can extend product distribution by implementing promotional campaigns and developing online trade, and to avoid stockout, we strongly recommend that orders be placed with a great deal of attention, as the delivery time should be considered because the deadline can be variable from one command to another, being influenced by a multitude of factors: number of orders placed at the vendor; climatic conditions; time required to complete the production, etc.

We can say that achieving the optimal stock level is a hard target to be met with precision, but each entity after a certain amount of time, longer or shorter, depending on the specifics of the activity carried out and implementing strategies that require effective administration and management can identify at what stock level it can achieve a maximum of earnings, or profit, with a minimum of costs.

The optimal inventory level aims to record the highest inventory management effect, i.e. each entity must record, while performing the business, production costs as small as possible but with maximum benefits, so that the storage costs are as small as possible. The stock should express real consumption needs, so inventory needs to be set so that the entity is encouraged to use stocks

effectively, i.e. to mobilize all the factors that lead to acceleration of the rotational speed of the stocks.

The volume and structure of inventories play an important role in optimizing the activity of an entity, those influencing both positively and negatively the results of activity. The effects of overstocking are the liquidity bottlenecks, the deterioration of raw materials and materials, while the stockouts lead to disruption of activity, loss of sales which actually means profit reduction, and loss of credibility in relation to customers. In order to avoid these situations, it is necessary to implement a stock planning and optimization system, and this system has the role of forecasting, planning and determining the optimum amount of inventory needed to ensure the normal performance of the business.

We recommend that the stocks' size be set so as to ensure a balance between the supply process and the production process. If the achievement of this balance is done, it means that the proposed goal has been reached and the entity's existence is motivated; at the same time, an accounting principle is confirmed, namely the principle of continuity of activity, which implies the continuation of activity by the entity in a foreseeable future.

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