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Renew Inventory Management System Of Pharmaceutical Companies In Bangladesh

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ABSTRACT:

The article represents some better solutions of inventory management system in pharmaceutical companies of Bangladesh. As we know, in our country pharmaceutical companies play very important role in industry sector. Also they have enormous contribution in economy. But most of the companies face problem in managing inventories. Consequently, the whole supply chain can be disrupted, as several steps of supply chain are involved with inventory management. To solve this problem well-organized inventory management processes are required. So here we have found some feasible solutions, those can be implemented for better production rate as well as increasing the growth rate of a company. Cash is very important for running a company, so our solution is also involved with how a company can get the cash back soon which gets stuck into finished products.

Index Terms—Enormous, Feasible, Inventory

I. INTRODUCTION:

The pharmaceutical industry in Bangladesh is one of the most technologically advanced sectors in the country, according to the World Bank. Given the fact that practically all of our country's overall medical demand is met by local enterprises, the industry is progressing forward with significant potential. In addition, this industry made a 1.83% contribution to the GDP in the 2017-18 fiscal year. During the forecast period of 2019-2025, it is predicted to increase at a compound annual rate of more than 12 percent. Aside from that, according to the research named "Bangladesh Pharmaceutical Market Future Outlook Opportunity-2025," the top 50 pharmaceutical companies are locating their facilities at the API (Active Pharmaceutical Ingredient) Industrial Park in Munshi Ganj, Bangladesh. This will assist in improving the rate of manufacturing [7]. To keep up with this rate of expansion, inventory management is necessary. An effective inventory management system will aid in the achievement and implementation of this growth rate. Furthermore, a well-balanced Supply Chain is necessary for the continued development of this sector. Every stage of the supply chain, from the procurement of raw materials to the manufacturing of finished goods, is important.

II. RELATED WORK:

Previously, some work had been completed on the subject of inventory management. "Quality Control and Inventory Management Practices at Pharmaceuticals Industries in Bangladesh" [4] - A Case Study on Central Pharmaceuticals Ltd. was the title of a research article written on inventory management in 2015, which was published in the journal Inventory Management. The author of this study concentrated on the topics of quality control and inventory management. In this subject, we learned about some fundamental sorts of inventories, as well as about two fundamental types of inventory control systems. It is necessary to make accurate forecasts, as well as to conduct a market survey and gather information. Another article, entitled "INVENTORY MANAGEMENT OF PHARMACEUTICAL INDUSTRIES IN BANGLADESH," [2] was written in the year 2011. The author discusses the use of RFID in inventory management systems in this article. In addition, a simulation is performed in Arena in order to calculate the product timings of a product. In light of the information contained in all of these publications and some other works, we attempted to propose some novel and innovative methods in the field of inventory management. In this article, we have explored all of our possible solutions, all of which may be applied quickly and easily by a business.

III. METHODOLOGY:

We used methodology to accomplish our study goal, which included extensive investigation and review of various essential and associated statistics, as well as connected newspaper articles, research articles, and journals.We concentrated mostly on theoretical analysis as well as field investigation. We have seen that pharmaceutical companies are facing some problems in inventory

management processes. Apart from that, we solicited feedback and suggestions from those who are involved in this subject.

A. Supply Chain of Pharmaceutical Industry:

In any industry, a well-developed supply chain is a must-have component. A company's ability to operate for an extended period of time is dependent on its ability to maintain a balanced supply chain. The supply chain includes everything from the procurement of raw materials to the delivery of the finished product to customers. Raw materials, work in process (manufacturing), and stationary stocks (warehouse) are all included in the Inventory category.

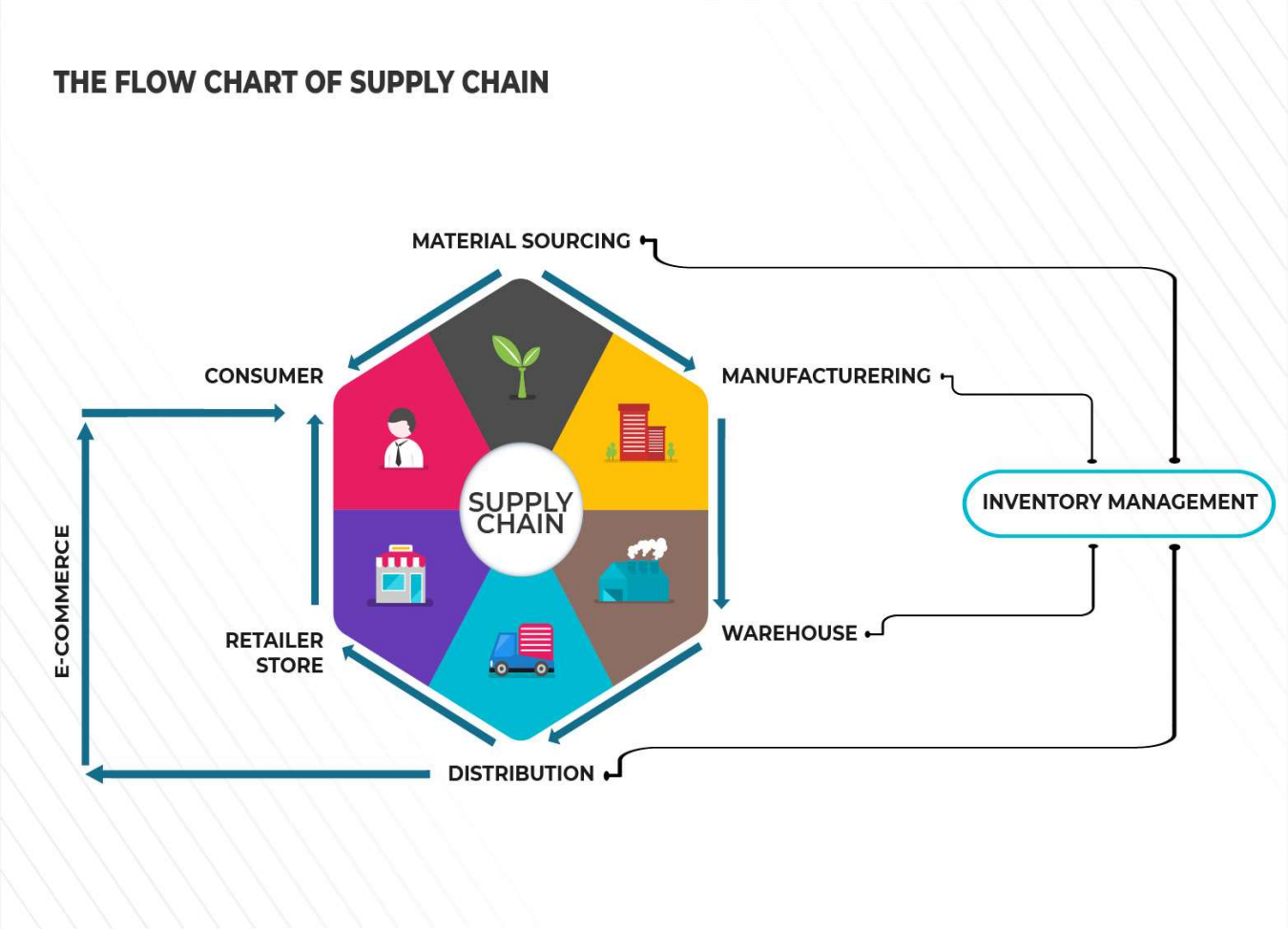

Fig. 1. Flow Diagram of Proposed Method.

B. Importance of Inventory Management:

- Inventory, in conjunction with the other sectors, plays a vital function. The majority of the money is stuck in inventories. The majority of a firm's funds are spent on purchasing raw materials, and the remaining funds are returned to the corporation when the end product is sold, as we all know. So, in essence, they utilize cash to purchase raw materials and then recoup the money by selling the finished product.
- Every organization should strive to shorten this cycle time. Because as soon as the cash is returned to the company, it can be used in other areas such as purchasing raw materials, manufacturing, boosting production rate, and so on.
- A precise inventory management system is essential in order to save cycle time.

C. Types of inventories are:

The basic classification between inventories are:

- Raw materials.
- Work in process products.
- Finished goods.
- Packing materials.
- Materials in transit.
- Stock of stationary, etc.

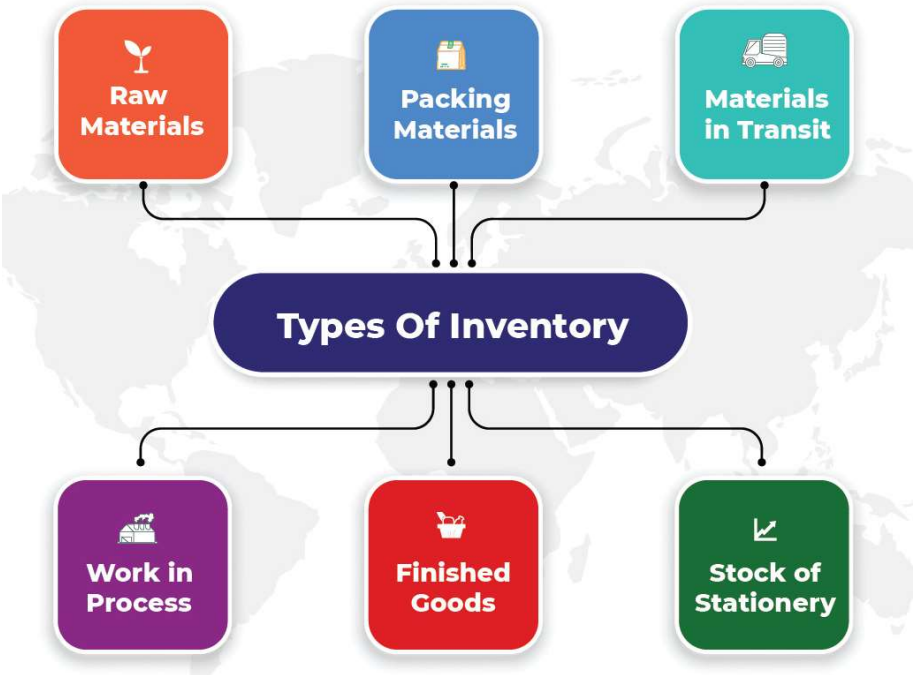

Fig. 2. Classification between Inventories.

D. Some Inventory Management Techniques:

Inventory Management Techniques are described with the figure 3 in our research purpose. We classified the Inventory Management Techniques in some several methods which we preferred the convenient.

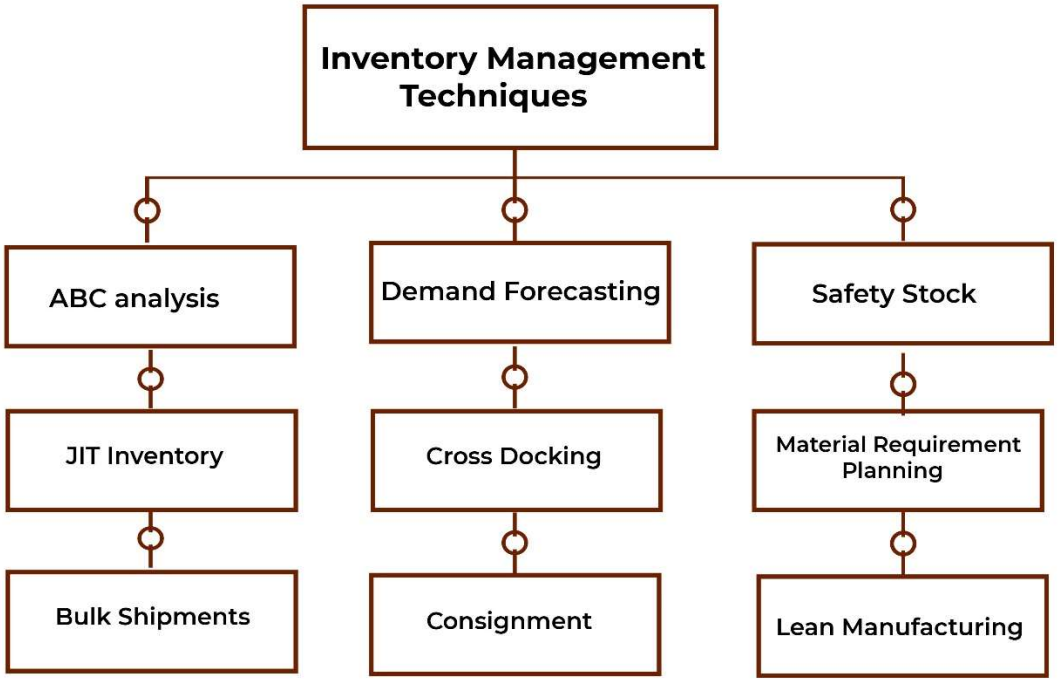

Fig. 3. Some Inventory Management Techniques.

E. Some Ideas about Inventory management:

1. **Inventory turns:** It basically measures the number of times inventory turns over. By increasing inventory turns a company can run the cash flow and products flow at a time.
2. **Cash to Cash Cycle:** As we know cash is important for any company. Without cash a company can't increase the production rate. Inventory turns can easily reduce the cycle time.

F. Planning and controlling of inventories in order to meet the competitive priorities:

Cycle counting: Products should be counted, and records should be updated on a periodic basis. Using this, causes of errors can be identified and corrected, Shutdown and interruptions can be found easily. For this trained personnel audit is necessary.

Record accuracy: Accurate records are very important and critical ingredients in production and inventory system. Incoming and outgoing products and raw materials record must be accurate and timely updated. Categories of demand and amount of safety stocks must be updated.

IV. PROBABLE SOLUTIONS:

1. If a company can increase the number of inventories turn ratio, it will help to reduce the time gap of cash-to-cash cycle time. As a result, company will have enough cash to use in increasing production rate.

2. Using cycle counting a company can achieve the perfect record accuracy. We know a company must have the accurate record of their products. It helps to avoid the backlog of products. An accurate record helps a company in forecasting their products. Forecasting is basically the art and science of making projections about what future demand will be.

3. Ensure the safety stock. Safety stock helps to prevent the sudden increasing of demand. It enhances the probability of not getting out of stock in an ordering cycle. Recently we have seen huge medicine crisis during pandemic time. This thing happened because of unavailability of safety stock.

4. Batch Card: Keeping information about a single batch of a product is the purpose of a batch card. One card will consist of the information on the amount of hand, losses, and adaption for that specific batch of medicine and this information will be kept for a single lot of medicine in a cold room. When there are multiple batches available the batch card with the earliest expiration date should be placed on top.

5. Inventory Control Card: The inventory control card keeps the information about all the batches of a product. This card is a list of all batch cards for a product. One medicine with multiple batches will have multiple batch cards and one inventory control card. In this card total amount on hand total losses and adaption for all batches will be shown.

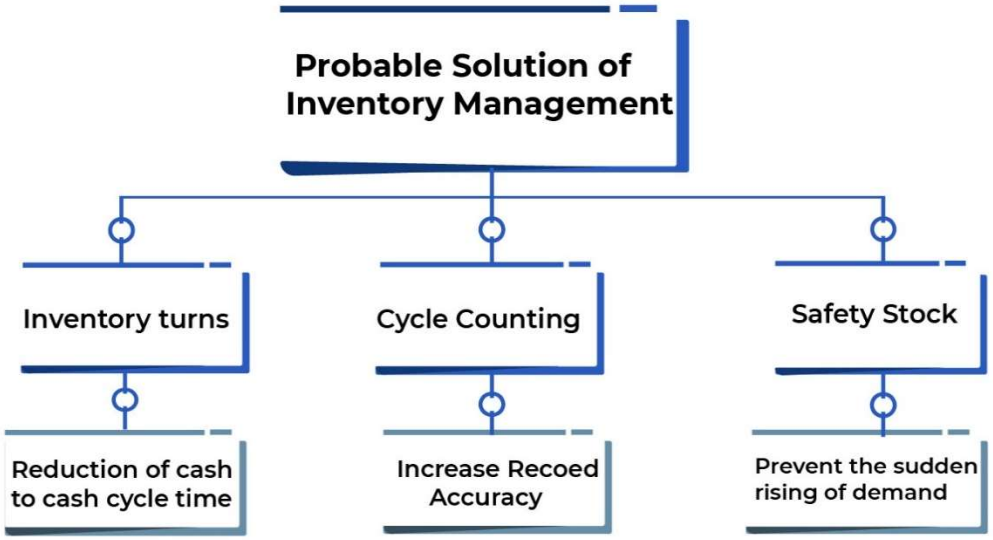

Fig. 4. Problem Solution Structure.

In Bangladesh, the pharmaceutical industry uses barcode to manage its inventory widely. We are proposing NFC (Near Field Communication) as a new inventory control system that is very much more effective in many ways than a barcode. Barcode needs a specific alignment to read the codes where an NFC reader can read the code from any angle. Bar-code are not re-writable. If we need to update any information we have to print it again and the previous barcode are useless at that time. Though NFC is comparatively more expensive than barcode we can update any information at any time and use it as our requirements. As the barcode are printed they can be damaged in many ways. Damaged barcode cannot be read by the reader. On the other hand, NFC has almost 0% possibility to be damaged as it is not printed. The barcode system uses Code 39 algorithm which is very easy to hack Conversely NFC uses encryption and a special processor which is not that easy to hack. Comparing both it is clear that NFC provides the best security. [8]

V. CONCLUSION:

Inventory, in conjunction with the other sectors, plays a vital function. The majority of inventory management in the pharmaceutical sector is quite complex, as it involves multiple steps in the supply chain throughout the process. In this post, we've primarily discussed inventory management systems and how they work. We've come up with three possible solutions to this problem. An increase in the growth rate of a pharmaceutical company will aid in the achievement of that goal. Because using Inventory reduces cycle time and increases record accuracy, it is possible to minimize cycle time and boost record accuracy. Having both is critical to effectively managing the inventory. In order to accomplish this, skilled and dedicated work is required. More

importantly, effective inventory management can improve the overall performance of the supply chain, elevating the organization to a higher level while also assisting in the optimization of profits.

REFERENCES:

[1] Md. Ariful Islam, Choudhury Abul Anam Rashed, Jahid Hasan (2019). RAW MATERIALS SHORTAGE AND THEIR IMPACT ON THE MANUFACTURING BUSINESS – AN EMPIRICAL STUDY IN THE PHARMACEUTICAL SECTOR OF BANGLADESH.

[2] M. E. Hoque, N. Paul. (2011). INVENTORY MANAGEMENT OF PHARMACEUTICAL INDUSTRIES IN BANGLADESH.

[3] Haque, M., Rafikul Islam. Impact of supply chain collaboration and knowledge sharing on organizational outcomes in pharmaceutical industry of Bangladesh.

[4] Tasneem , T. (2015). Quality Control and Inventory Management Practices at Pharmaceuticals Industries in Bangladesh - A Case Study on Central Pharmaceuticals Ltd.

[5] Inventory Management of Beximco Pharmaceuticals Limited. (2022, April 14). Retrieved from Educarnival: https://www.educarnival.com/inventory-management-of-beximcopharmaceuticals-limited/

[6] Bangladesh on track to becoming a $6B pharma market by 2025. (2020, November). Retrieved from The Daily Star: https://www.thedailystar.net/business/news/bangladesh-track-becoming-6b-pharma-market-2025-1995741

[7] Bangladesh Pharmaceutical Market Future Opportunity Outlook 2025. (2020, July). Retrieved from Research and Markets - Market Research Reports: https://www.researchandmarkets.com/reports/5125539/bangladeshpharmaceutical- market-future

[8] Iqbal, R. . (n.d.). NFC based inventory control system for secure and efficient communication.

[9] Gereffi, G., Joonkoo Lee. (2012). Why the World Suddenly Cares About Global Supply Chains.