

## **CHALLENGES OF INVENTORY OPTIMIZATION TECHNIQUES**

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### **ABSTRACT:**

*The importance of inventory optimization need not be emphasized for the 21st century organization. Various techniques adopted in order to maximize return and control the inventory costs. From time to time corporations are evolving with change management due hectic competition, market size, technological advancement, and global level supply chain and distribution management interventions etc., This paper reviews the inventory management importance, inventory optimization techniques, controlling process and benefits of inventory optimization and challenges faced in the Global world.*

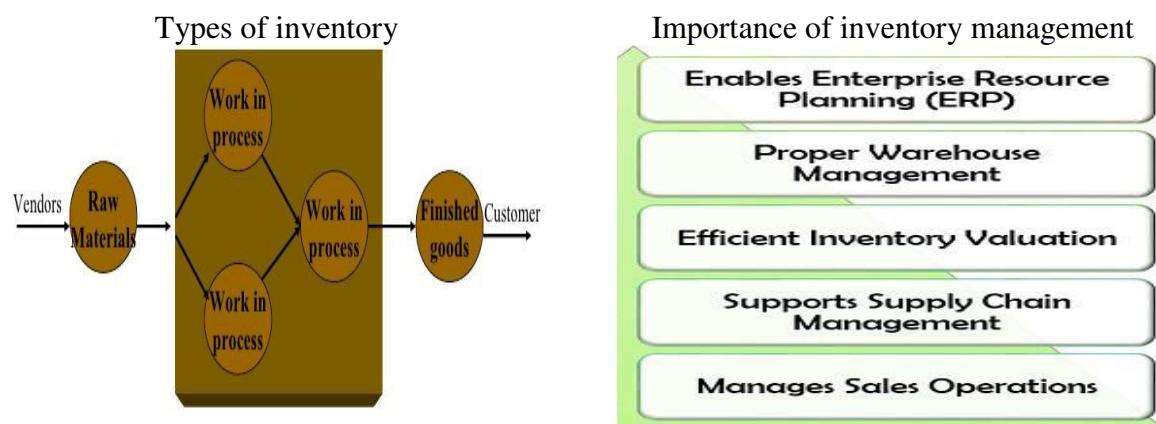
**Keywords:** Inventory optimization, Challenges, organizational benefits

### **1.1. WHAT IS INVENTORY MANAGEMENT?**

*"Inventory optimization is the provision of the right inventory, in the right quantities and at the right locations, to meet the supply and demand of parts and materials in the enterprise." - Trisaman o Gorman*

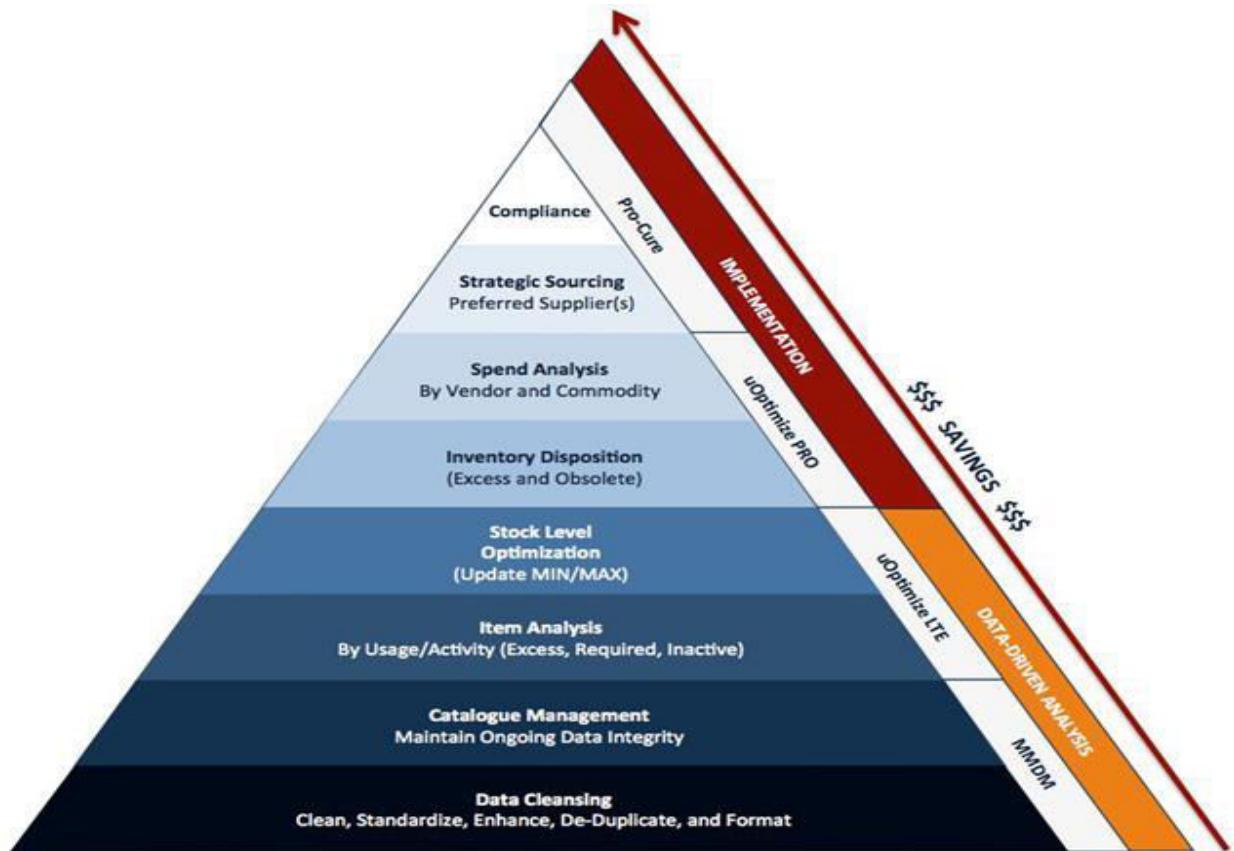
Inventory management is a compilation of techniques, strategies and tools for storing, delivering, ordering and tracking inventory or stock. "Inventory management is basically maintaining ideal stock management system. It is part SCM which involves controlling unnecessary costs, supervision of inventory level and keeping optimum position, ideal storage of inventory, managing the productivity and sales volume" The following figure illustrates the type of inventory followed in the company.

**Figure No.01. Types of inventory and its importance**



Effective inventory management is essential for ensuring a business has enough stock to keep and managing uninterrupted supply of goods to meet and continue production. If managed it will produce right quantity required; If inventory management is not handled properly it can result in a business either losing money on potential sales that can't be filled or wasting money by stocking too much inventory.

**FIGURE NO.02. INVENTORY OPTIMIZATION**



(Source: <https://www.reliableplant.com>)

## **1.2. BENEFITS OF INVENTORY CONTROL TECHNIQUE**

Today, inventory management has become vital for the survival of an organization. The profitability of business is not too far if very well-maintained inventory level. Provision of managing right inventory is to get right quantity, right location, and managing the demand and supply with materials and its effective management.

- Avoiding costs types such as carrying costs.
- Balancing stock shortages and oversupply
- Controlling shortage of supplies
- Inventory management to ensure physical assets' reliability and availability.
- Managing the inventory is said to be more complicated set of process.
- Managing the stock management
- Optimizing inventory items
- Reduces inventory costs

Figure No.03. Importance of inventory control



(Source: <https://www.vinculumgroup.com>)

### 1.3. OPTIMIZATION CHALLENGES

**“Control of the inventory, control of the profits”-Joesph Brandit**

One of the biggest challenges that industries face is- figuring out how to manage inventories as per the changing needs and growth in product portfolio. Effective inventory management proves to be the most important part in overall business operations. Manufacturing, procurement and sales activities directly impact the inventory handling, but lack of proper platform to these departments' leads to inactive support in inventory decisions. Lack of inventory management knowledge is the main reason why businesses fail. Fortunately, there are certain practices that can help you to maintain sufficient level of inventory with optimum resources used and lowered costs.

### 1.4. SIGNIFICANCE OF INVENTORY OPTIMIZATION

**“Make inventory a common enemy for your company”-Dave waters**

Inventory is main and largest assets within most companies yet it does not always receive an appropriate amount of management attention. There are good and bad reasons to hold inventory, so organizations need to understand what is contributing to their inventory and why. The role of inventory in the performance of a supply chain should also be understood for effective management. Inventory issues arises lack of best practices and application of conventional methods including Manual documentation, formless storage design and processes, inaccurate physical counting, there is proper tracking about product life. The issues are faced by inventory size and stock volume. Inventory managers fail to manage products such as - managing 100's or 1000's item collectively, each with their own specifications and characteristics. If right type tools are not employed then (say for example any analytical tool), it is very difficult to manage the shortage and short supply and in excess). Managing the effective inventory is said to be product-driven business.

- Tracking the moving parts and products in and out
- Right location: Material location results in time wastage in searching the material
- Correcting: Improper records results in manual documentation errors.
- Managing the pressure from Increased globalization
- Losses in inventory visibility

- Know things – are complex decisions.
- Multiple channel and network issues and challenges
- Network changes M& A
- Learning the growing demands of business.
- Improving: Poor warehouse or stock layouts can increase stock picking time and increase in labor costs.
- Excess supply leads higher carrying cost
- Improving the warehouse and product maintenance.
- Reduction of PLC
- Stock maintenance and efficient management
- Effective inventory management

#### **1.4. BENEFITS OF OPTIMIZING INVENTORY**

The benefits of inventory management is to find striking the balance the between supply and excess demand. The organizations works with lot of constraints along with organizational goals. The effects on business performance can be assessed in the form of level of availability of products, cutting down inventory costs etc., The economic forecasting provides the demand estimation and subsequent problems in industrial engineering. Good Management = Inventory management + SCM adjustments. The decisions are made with various parameters, the successful organization are one who effectively manage the operations management.



- Allows modeling of different ‘what-if’ policy scenarios to arrive at the best mix of service and inventory investment
- Good layout design and structure
- Elimination in write offs for obsolete or expired inventory items
- Enhanced transparency
- Noting the problems of inventory
- Improve the ability to improve demand conditions
- Enhances stock situation
- Provides clarity and objective measures
- Provides optimized results
- Reduces waste in the supply chain

**Focusing on these new and more targeted inventory optimization strategies can result in a variety of operational and financial benefits including:**

- Improved product quality
- Managing the seasonal fluctuations
- Efficient vendor relationship
- More of automation function
- Optimal level of stock holding
- Purchase economics

- Condensed dead stock
- Reduced freight costs
- Decrease in inventory holding costs
- Decline in on-hand stock levels
- Fall in out-of-stock instances

### **1.5. CONCLUSION**

There are so many practical problems arises if it is managed properly. This resulting in poor management, affects financial health of the company. The overall growth perspective will be influenced the inventory level and

### **Better Inventory Management**

*"With RapidResponse we improved event management for supply with non conformance and improved adherence to inventory targets above 95%. We are consistently managing abnormal scrap below budget (20% below budget)."*

Source:  Executive, Global 500 Pharmaceuticals Company

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