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Risk management is key enabler in materials management (A study on significance of risk management in materials management)

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Abstract

Materials are basic core organs of any product it occupies around 40 to 60% of total cost of production. The science of materials management has its own specialised dominie in the business management. Materials management will attempt resolve the issues viz., materials shortages, delays in supply, price fluctuations, damage and wastage, and lack of storage space. Managing productivity and cost effectiveness of material is very essential. Inventory management system involves procurement, storage, identification, retrieval, transport and supply to production in effective and efficient methods. Risk is inevitable and inherent in any concern. Risk management plays very crucial role in modern business arena as a protecting and safeguarding the business. The life of any production entities depends on effectiveness of materials management. Therefore, Risk management must be synchronized with material management. The modern risk management tools and techniques we will reap the prospective results with safety and security of business operations. This paper makes an attempt to emphasise the importance of risk management in materials management.

Keywords: materials, fluctuations, inventory, inherent and synchronize

Introduction

The Webster's dictionary defines materials as "*the elements, constituents, or substances of which something is composed or can be made.*" Some studies concluded that materials account for around 50-60% of the total cost.

Every organization, big or small, depends on materials and services from other organizations to varying extents. These materials and services are obtained through exchange of money. The various materials used as inputs, such as raw materials, consumables & spares, are required to be purchased & made available to the shops / users as & when needed to ensure uninterrupted production. Therefore, efficient management of input materials is of paramount importance in a business organization for maximizing materials productivity, which ultimately adds to the profitability of the organization. The main concern of any Business management is to maximize the Return on Investment (ROI). In many manufacturing organizations, the cost of materials alone happens to range from 40 % to 60 % of the total expenditure. Obviously, a better management of material is expected to ensure reduction in overall cost of operation and smoothness in supply of inputs. This requires well coordinated approach towards various issues involving decision making with respect to materials. It is obvious that materials should be obtained at the lowest cost possible to provide savings to the company. All the materials related activities such as material planning & indenting, procedure, variety reduction through standardization & rationalization, reducing uncertainties in demand & supply, handling & transportation, inspection, proper storage & issue of materials to the internal customers, inventory management, vendor management & finally disposal of obsolete, surplus & scrap materials etc. taken together is termed as "Integrated Material Management" (IMM). To carry out these functions efficiently, it is essential to have a very good supplier base, order booking process & inventory management system as well as expert materials management professional. Materials management is just managing all types of materials in an organization. It can be broken down into three areas: acquisition, quality control, and standards.

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The famous 5 Rs of Materials Management

- Of the Right quality
- in the Right quantity
- at the Right time
- from the Right source
- at the Right time

From the management point of view, the key objectives of MM are

1. To buy at the lowest price, consistent with desired quality and service
2. To maintain a high inventory turnover, by reducing excess storage, carrying costs and inventory losses occurring due to deteriorations, obsolescence and pilferage
3. To maintain continuity of supply, preventing interruption of the flow of materials and services to users
4. To maintain the specified material quality level and a consistency of quality this permits efficient and effective operation
5. To develop reliable alternate sources of supply to promote a competitive atmosphere in performance and pricing
6. To minimize the overall cost of acquisition by improving the efficiency of operations and procedures
7. To hire, develop, motivate and train personnel and to provide a reservoir of talent
8. To develop and maintain good supplier relationships in order to create a supplier attitude and desire furnish the organisation with new ideas, products, and better prices and service.
9. To achieve a high degree of cooperation and coordination with user departments
10. To maintain good records and controls that provides an audit trail and ensures efficiency and honesty
11. To participate in Make or Buy decisions

Advantages of materials management

- An effective material management system can bring following benefits
- Reducing the overall costs of material
- Better handling of material
- Reduction in duplicated orders
- Savings in inventory costs
- Material is on site when needed and in the quantities required
- Improvements in labour productivity
- Improvements in project schedule
- Quality control
- Better field material control
- Better relations with suppliers
- Customer satisfaction with good products

Techniques commonly used in materials management

1. ABC analysis
2. EOQ model
3. SOS model
4. HML model
5. FSND model
6. VED model
7. DOLF model

Materials manager should always maintain the following levels

1. ROL: Reorder Level
2. ROQ : Reorder Quantity
3. Maximum-Level
4. Minimum-Level
5. Danger level
6. Average level

Risk Management

The world of business has always had an intuitive understanding of risk. Risk analysis is the study of the underlying uncertainty of a given course of action. It refers to the uncertainty of forecasted future cash flows streams, variance of portfolio or stock returns, statistical analysis to determine the probability of a project's success or failure, and possible future economic states. In the unbroken chain of business process, the purpose of which is a sale of commodities to clients, the process of supplying with materials plays an important role (Schreibfeder 2006)^[8].

As far as risk goes, most of the business owners view insurance as their first line of defense. Not that insurance isn't an appropriate risk prevention tool, but it's not always economically feasible or efficient to try and cover each and every possible risk with insurance. There are actually many risks that can be dealt with thorough the concepts of risk transfer, risk sharing, risk retention, risk control, risk prevention, and risk avoidance. Etc.

Pillors of Risk Management

Risk Identification in Material Management	Risk Assessment in Materials Management
Risk Control in Materials Management	Risk Monitoring in Materials Management

The following methods are most frequently applying in to reduce risk in materials management.

1. **Transfer of Risk:** There are parties, aside from your own insurance, to which you might transfer the risk. Risk transfer is risk management technique whereby one party (transferor) pays another (transferee) to assume a risk that the transferor desires to escape.
2. **Risk Sharing:** There are often opportunities to share the risk with the other parties involved with the construction project. The contract should have a clause that stipulates each of the involved parties would be liable for those losses caused by his/her actions or inaction.
3. **Risk Retention:** Whether they want to or not, all construction businesses are going to retain some of the more minor risks
4. **Risk Avoidance:** Although risks are often tempting, such as a supplier offering a cheaper material, most risks are best avoided. If you suspect that the cheaper material could be defective, then it simply makes better sense for you to put the longevity and reputation of your business first and avoid the risk.
5. **Risk Prevention;** Risk prevention is a very broad topic with many elements, but the premise of the concept is taking action to avoid negative events from occurring in

the first place. It's usually very simple carelessness that causes accidents.

6. **Risk Control;** Like risk prevention, risk control is a very broad topic with many elements, but the premise of the concept is reducing the amount of loss incurred during a negative events. Risk control should also be an ongoing training program for employees, supervisors, and managers.
7. **Risk Avoidance:** A conscious decision not to expose oneself or one's firm to a particular risk of loss
8. **Loss control.** Actions taken to reduce the frequency and/or severity of losses
9. **Frequency Reduction:** A method of loss control that lessens the chance that a peril will occur
10. **Severity Reduction:** A method of loss control that will reduce the seriousness and extent of damage should a Severity Reduction
11. **Separation:** A form of severity reduction involving the reduction of the maximum probable loss associated with some kind of risks.
12. **Duplication:** A form of severity reduction in which spare parts or supplies are maintained to replace damaged equipment and/or inventories immediately
13. **Pre-Loss Activities:** Loss control methods implemented before any losses occur. All measures with a frequency-reduction focus, as well as some based on severity reduction, are of this type.
14. **Concurrent Loss Control:** Activities that take place at the same time as losses to reduce their severity
15. **Post-Loss Activities:** Severity-reduction measures such as salvaging damaged property rather than discarding it.
16. **Diversification:** Process of spreading risk through a firm's involvement in various businesses or through the location of its operations in different geographic areas
17. **Hedging:** A transfer of risk from one party to another; similar to speculation and may be used to handle risks not subject to insurance, such as price fluctuations.
18. **Enterprise-Wide Risk Management:** It is an approach for managing both pure and speculative risks together; another name for integrated risk management.

The significance of Risk Management in Materials management

Risk management process is considered as an important discipline that the business has in its recent times. Many organizations tend to realize the benefits of risk management strategy. Implementation of risk-management programs provide both the strategic basis and the operational framework for handling in materials management is requires continuous and lot of effort. The huge amount of investment, installation of new technology, obsolete of existing equipment, training to employees, monitoring, etc., involved in managing risk. Once effective risk management system incorporated in traditional materials management there is a tremendous advantages can be obtained.

Protecting resource (Material and ancillaries)

Safety

Security

Cost advantages

Effectiveness in quality and quantity

Minimize deterioration problems

Reduce break-downs

Reduce delays

Safe guarding from hazards

Safety from accidents (fire, theft etc)

Maximize quality out put

Safety from natural calamities

Minimize re-work processes

Reduce inspection cost

Improve quality consciousness etc.

Buildups employee morale in safety and security

Improve customer satisfaction and brand loyalty

Conclusions

Of late, many firms recognized the importance of risk management in material management. The materials are managed in a series of stages such as procurement, transportation, Shipping, grading, storage, warehouse maintenance, supplying to production centres Etc. In each and every stage possibility of occurrence the risk cannot be ignored. Minimising the risk at all the above levels give management not only better utilization of resources but also serves as competitive advantage. Hence, risk management adds advantage to the function of material management.

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