

A Study on Inventory Management and Control

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Abstract:

This study investigates the inventory management practices at Apollo Tyres, emphasizing its impact on operational efficiency and financial outcomes. The report examines the company's strategies for handling raw materials, work-in-progress, and finished goods while addressing challenges like fluctuating raw material costs and storage inefficiencies.

Keywords:

Inventory Management, ABC Analysis, Economic Order Quantity (EOQ), VED Analysis, JIT (Just-in-Time), Supply Chain, Manufacturing Efficiency, Inventory Control, Raw Materials.

1. Introduction:

Inventory management is the backbone of any manufacturing company, especially for a giant like Apollo Tyres. Whether it's raw rubber for making tyres or the finished goods ready for delivery, managing stock smartly is the secret sauce for cost savings and smoother operations.

- **What's Inventory?** It's everything a company keeps ready to use or sell— raw materials, half-done products, or fully finished items.
 - **Why is it Important?** Stock that's too high wastes money; stock that's too low can delay production. It's all about finding the right balance.
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2. Goals of the Study: Primary Goals:

1. Look at how Apollo Tyres keeps track of its stock.
2. Find ways to save money while ensuring no raw materials go to waste.
3. Use smart tools like ABC Analysis (grouping items by value) to focus on what matters most.

Extra Goals:

1. Check how Just-in-Time (JIT) helps avoid overstocking.
 2. Give practical tips to improve stock control.
 3. Study the connection between better inventory and smoother finances.
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3. How We Studied It:

We combined on-the-ground interviews with Apollo Tyres staff and data from company reports. Then, we used some cool tools:

- **ABC Analysis:** To prioritize which stock items need more attention.
 - **EOQ:** To calculate the perfect order size that saves money.
 - **VED Analysis:** To figure out which items are absolutely necessary versus "nice to have."
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4. What We Found Out:

4.1 Apollo's Stock Strategy:

- Using **ABC Analysis**:
 - "A" items (like raw rubber): Small in number but big in cost—these need strict control.
 - "B" items: Moderate value, like carbon black used in making tyres.
 - "C" items: Low-cost items like packaging materials.
- With **VED Analysis**:
 - Vital (V): Can't make tyres without these!
 - Essential (E): Important but not urgent.
 - Desirable (D): Good to have but won't stop production without them.

4.2 Cost-Saving Insights:

- Apollo uses EOQ to figure out how much raw material to order at one time, saving up to 15% on unnecessary storage costs.
- By buying raw materials in bulk, they also get discounts, which adds to savings.

4.3 Challenges They Face:

- **Raw Material Prices Keep Changing:** Rubber prices can go up and down, making budgeting tough.
- **Storage Problems:** Warehouses can get overcrowded, leading to extra handling and damaged goods.

4.4 How JIT Helps:

Apollo's Just-in-Time system ensures materials arrive right when they're needed. This saves space and cuts costs while keeping production on schedule.

5. Recommendations for Apollo Tyres:

1. Better Tracking with Technology

- Use apps or AI tools to keep an eye on stock levels in real time.
- Forecast demand so there's no overstock or shortage.

2. Work Closely with Suppliers

- Build partnerships with suppliers for steady pricing and timely deliveries.
- Reward suppliers who deliver on time and meet quality standards.

3. Expand JIT Across the Company

- Train teams to use JIT in every unit for even bigger cost savings.

4. Organize Warehouses Smarter

- Put high-priority items like raw rubber closer to the dispatch area for quicker access.

5. Plan for the Unexpected

- Keep an eye on global trends in raw material prices and plan ahead for any sudden spikes.
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6. Why It Matters:

When inventory is well-managed, everything runs smoother—costs go down, production speeds up, and customers get their products on time. For Apollo Tyres, these strategies aren't just about saving money; they're about staying ahead in the competitive tyre industry.