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A STUDY ON INVENTORY MANAGEMENT USING MILK RUN CONCEPT IN HYUNDAI MOTOR INDIA

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Introduction:

- Inventory or stock refers to the goods and materials that a business holds for the ultimate goal of resale, production or utilization.
- Inventory management is a discipline primarily about specifying the shape and placement of stocked goods.
- It is required at different locations within a facility or within many locations of a supply network to precede the regular and planned course of production and stock of materials.

Need for Study:

- To identify an alternate method to improve inventory management.
- To check the feasibility of Milk Run concept in reducing inventory storage & cost cutting.
- To study the connection between logistics & improved inventory storage.

Scope of Study:

- This study is made from the data collected from Hyundai Motors India (HMI) - Irungattukottai, during my tenure as Project Trainee from January 2022 – March 2022.
- This study deals with Inventory Management on Local Products (LP).
- This study is intended to focus mainly on Milk Run concept in improving the Inventory Storage to improve Cost Cutting & Inventory Storage.

Objectives of Study:

- To study the current methodology followed in Hyundai Motors India – Irungattukottai.
- To identify the problems present in the current methodology.

- To suggest milk run method in improving the Inventory management.

Current Methodology:

- Hyundai Motors India, is India's first smart mobility solutions provider and the number one car exporter since inception in India.
- HMIL's fully integrated state of the art manufacturing plant at Irungattukottai boasts of advanced production, quality and testing capabilities.
- Currently at Irungattukottai, many of its raw materials such as Tires, Starter Motors, Batteries, Wheel Hub Cap, etc., are bought out from local vendors as Local Products (LP).

Problem:

- Raw materials bought out as Local Products (LP) from local vendors within a limit of 40kms have been tabulated.
- All these LP will be used within 4-8 hours from the time they reach the inventory.
- Now Hyundai Motors India – Irungattukottai, looks to minimize the inventory time and improve the cost cutting.

Milk Run Concept:

- Milk run is a delivery method in logistics which ensures that different deliveries from different vendors can be handled with maximum capacity utilization and minimal costs .
- The name Milk Run has been derived from the method used by the trucks to deliver the daily

requirements of milk to the dairy co-operatives picking up milk from multiple suppliers and delivering it to a common point for further process.

- A milk run ensures that that minimum distance is travelled and the maximum demand is carried into the truck or delivery vehicle so as to meet both the demand requirement and effective transportation with least cost.
- This is applied where the load is scattered in many different places and in smaller units.
- In such a case carrying from each center individually would be very expensive, hence a scheme is designed as per the requirements and accordingly all different units are procured and transported.

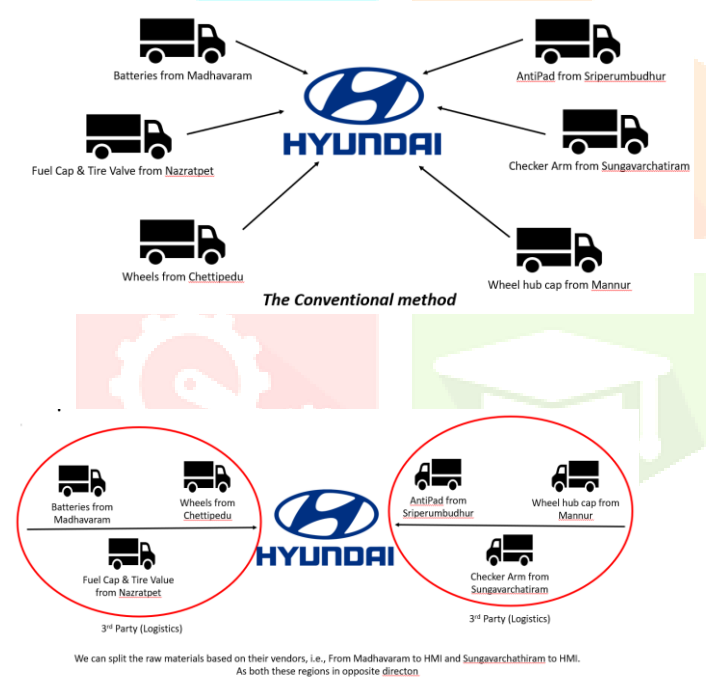
Importance of Milk Run Concept:

- Milk run as a process in Operations is quite important as it advocates a method which results in minimal costs at higher efficiency.
- Instead of each supplier or vendor sending multiple deliveries to a central point of demand, a single delivery vehicle makes trips to different points and picks up the goods.
- This makes sure that the costs are less and one vehicle is completely utilized. It goes around in a circular motion.
- It has become a critical concept in lean and agile companies where saving costs is very important.
- It is quite aligned with just in time and makes sure that the deliveries of materials happen at optimum times.

- It involves routing of materials with multiple pick up points and delivery to locations where the demand is high.
- One of the main aspects of milk run is the planning and routing aspect.
- A route which maximizes the pickups from multiple points and brings them to a central point with minimum amount of time and cost.
- Once the route is optimized, milk run starts showing a lot of benefits in the long run.

- This helps us to minimize the number of trucks involved in the same route and thus the cut the cost.
- Also the management can plan and estimate the amount of raw materials required for that particular working day and can procure the raw material such that nothing or very less remain as ideal in the inventory.
- By this one can make sure that the inflow of raw material to the outflow as value added products are maintained.
- Also the vendors and logistic agent can get a livelihood on a continuous basis.
- Also the reduction of trucks in the same route can help in achieving lesser carbon emission as per the Paris Agreement.

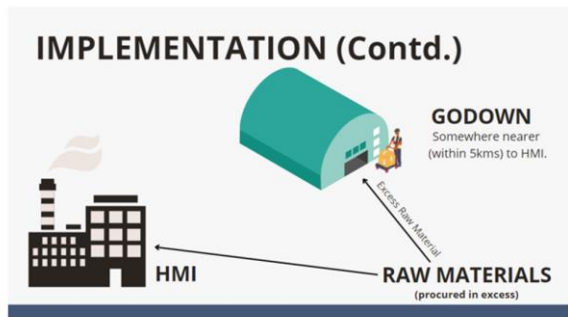
Implementation of Milk Run concept:



IN CASE OF TRAFFIC

- To reach HMI – Irungattukottai from Madhavaram, one has to cross Nazratpet and Chettipedu. So we can organize all these vendors under one 3rd party logistic agent.
- Similarly to reach out HMI – Irungattukottai from Sungavarchattiram, one has to cross Sriperumbudur. So all these vendors under another 3rd party logistic agent.

- During peak traffic hours, it may be difficult for the raw materials to reach HMI-Irungattukottai.
- This has caused a lot of problems for HMI - Irungattukottai to meet the required production.
- To avoid this, HMI - Irungattukottai, can build a godown nearer to HMI, such that 1-2 loads of required raw material can be procured in excess and stored there, which can be used during the peak traffic hours.



SUGGESTIONS:

- Instead of having separate trips to purchase materials from different suppliers, MR deliveries only take a single trip to all those suppliers to save time and resources. Fitting numerous materials in one transport vehicle requires the vehicle to be utilized to its fullest extent.
- By scheduling the supply of materials, manufacturers can also control their production. Producing just the right amount of finished products can minimize the risks of overproduction thus preventing a surplus and thereby reducing inventory and storage costs.
- A big part of greenhouse gas emissions are from the transportation industry. MR deliveries are not only cost-efficient, but they're also a more environmental-friendly logistics option. Fewer delivery trips means less carbon emissions and petroleum use.
- Using third-party logistics significantly reduces in-process inventory, increases capital flows, and reduces investment risks. A fully loaded trip leaves parent

companies with fewer tasks on their plate.

- Having a regular delivery schedule allows you to plan and condense the use of vehicles and the workforce needed to discharge materials.

CONCLUSION:

Due to the huge production at Hyundai Motors India, the availability & storage of raw materials are always a matter of high concern. Currently due to this, about 2500 trucks enter and exit HMI. The inventory required to manage such a huge load of raw materials are very high and the safety related to this has been questionable.

To avoid such chaos, based on my research at HMI, I have suggested Milk Run Concept which will come handy in managing the inventory and helping in cost cutting. This will reduce the total number of trucks entering and leaving HMI dramatically.

Milk-Run logistics has been planned to improve loading rates at possible levels and reduce the number of trucks and travel distances. As a result, it is an excellent transport method in which exhaust gases from trucks can be controlled. Therefore, the promotion of Milk- Run logistics can be highly evaluated from the viewpoint of environmental policy. The Milk-Run logistics requires accurate management based on the operational plan, we could introduce a logistics policy to increase transportation reliability.

The global warming problem in the environment due to the direct shipment can also reduced by use of milk run logistics. The milk run system reduces the carbon dioxide emission from the distribution system by reducing the

truck deliveries in transportation. The overall supply chain cost can be minimized by using milk run system in transportation instead of direct shipment.

