

**Optimizing the Transportation Model  
to Reduce Cost**

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## **Comments by the Faculty**

LMPPL (name of the company has been disguised to maintain the confidentiality) Group is continuously expanding its activities in India. In 2010, LMPPL invested more than 45 Rs. crores in plants and its sales organizations. In India, LMPPL is active with more than 20 plants in 10 cities. LMPPL, which uses 3PL (3rd party logistic provider), was keen to understand the reasons for escalating cost of transportation (the cost has increased substantially compared to the past quarters), and, possible methods to reduce the cost. The management was also interested to create model to keep track of cost and comparisons of professional carriers.

Based on the above, the following objectives were decided: to study current model of transportation at LMPPL, to analyse past data for better understanding of working, to identify the areas where there has been increase in transportation cost over the period, and to create a model to keep track of transportation cost and optimize it to minimize cost.

Data for study was collected from employees of LMPPL (manually entered) and available company documents. The data was analysed, and based on the analysis, a model was created for keeping track of transportation cost region wise and transporter wise.

The present study was a unique attempt to suggest a more cost effective transport system for LMPPL. The student, while carrying on the project, has drawn on the management concepts, such as, third party logistics. The student had one-to-one interaction with the concerned personnel and attempted to draw a realistic picture of the current transportation system. He also proposed a model for a more cost effective transport system. Overall, this project provided a great exposure to the student to integrate the conceptual learning of cost effective transport management with the real life situation of company and implement the learning according to the requirement of the management for the better functioning of the company.

**Mousumi Sengupta**

# **Optimizing the Transportation Model to Reduce Cost**

## **Introduction**

LMPPL (name of the company has been disguised to maintain the confidentiality) Group is continually expanding its activities in India. In 2010, LMPPL invested more than 45 Rs. crores in plants and its sales organizations. In India, LMPPL is active with more than 20 plants in 10 cities. The new, advanced factory of LMPPL was opened last year. The plant produces Plastic products. LMPPL is a leading supplier of Plastic products in India (products for daily domestic use). Currently, more than 200 associates work for LMPPL, and the number is still growing LMPPL. LMPPL which uses 3PL (3rd party logistic provider) was keen to understand why the cost of transportation has increased compared to the past quarters and what can be done to reduce it. The management was also interested to create model to keep track of cost and comparisons of profession carriers. After discussion with the management, the requirements of the project were identified.

## **3rd Party Logistic**

3rd Party logistic basically means outsourcing (partnering) the logistic part of business. Third party logistics providers typically specialize in integrated operation, warehousing and transportation services that can be scaled and customized to customers' needs based on market conditions and the demands and delivery service requirements for their products and materials. Often, these services go beyond logistics and included value-added services related to the production or procurement of goods, i.e., services that integrate parts of the supply chain. (Peter Boldtorff, 2007).

**Table 1**

3PL >			< 4PL
Standard	Advanced	Complete	Integrated
Transportation services	Vendor managed inventories	Order planning and processing	Production planning
Carrier selection	Stock accounting	Information and Communications Technologies (ICT)	Sourcing
Rate negotiation	Customs clearance	management	Routing
Fleet management	Assembly	Single invoice	transit times air vs. ocean
Warehousing	Packaging	Landed duty paid cost (per piece)	Supply chain consulting
Cross docking	Labelling	Payment collection	Real time supply chain monitoring and adjustment
Pick and Pack	Managing product returns	Real time inventory updates	
Distribution (direct to store/home)	Financing	Just in Time (JIT) inventory management	
Dispatching	Retail delivery, set up and onsite training		
Delivery documentation	Inventory tracking		
Shipment consolidation			

(OECD, Logistic Integration in Asia Specific region, 2000)

**Project Overview**

Based on the above, the following measures were undertaken.

1. To study current model of transportation at LMPPL.
2. To analyze past data for better understanding of working.
3. To identify the areas where there has been increase in transportation cost over the period.
4. To create a model to keep track of transportation cost and optimize it to minimize cost.

## Research Methodology

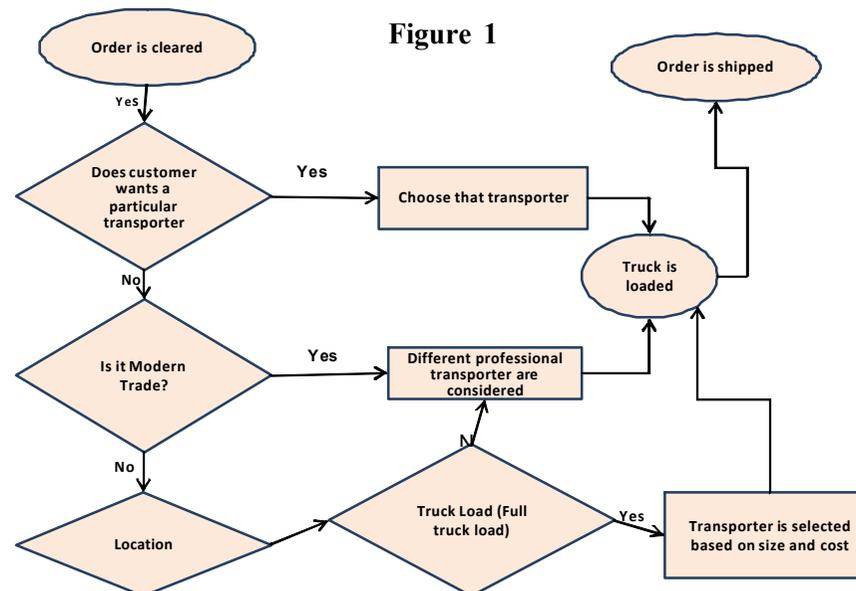
1. Collection of data from employees of LMPPL (manually entered) and ERP, Analyze the data and gather information.
2. Make suggestions and recommendation.
3. Create a model (using excel) for keeping track of transportation cost region wise, transporter wise and comparisons between profession carriers.

## Approach to Problem

After defining and identifying the data and problem, the next step was identifying key performance indicator (KPI). After looking into data and transportation model KPI should be identified. Once KPI is identified analysis should be carried out of past data and key regions should be identified where there is cost is high. The approach involved for understanding and analysing the problem was following:

1. Analysis of historic data
2. Observing day to day activities and working with dispatch team
3. Understanding the reason for choosing particular course of action in any situation.

The model followed for dispatch: (Ref: Author's own interpretation) is depicted in the Figure 1.



Identifying KPI was an important step towards any analysis, and few KPI's were identified and one of the most important was Volume/transportation cost. The importance of KPI (V/TC) can be explained on the basis of total more than 80 SKU. With huge list of inventory, every product has a different master packing and as their dimensions are different. Hence, LMPPL can easily rule out box/km as it won't provide as accurate results, whereas truck per invoice also can't be considered as LMPPL more often use Part load compared to Full Truck Load. (Ref: Author's own interpretation)

Only two options were remaining when it came to identifying KPI. Invoice amount (sales)/TC (Transportation cost) or V(volume)/TC. V/TC is the best KPI for plastic and filament products (as they have large volume but comparatively low weight). Unfortunately, ERP was not generating volume of dispatch on invoice and it was hard to identify how much volume has been transported in particular dispatch. So for future analysis and for this study two steps were identified and carried out.

1. Implementing and cross checking ERP generated volume of the products with physically measured list.( The process included measuring physically all the SKU's in house and outsourced)
2. To carry on analysis with the past data with Invoice amount/TC, which will give as fair idea where LMPPL are incurring more cost compared to other places.

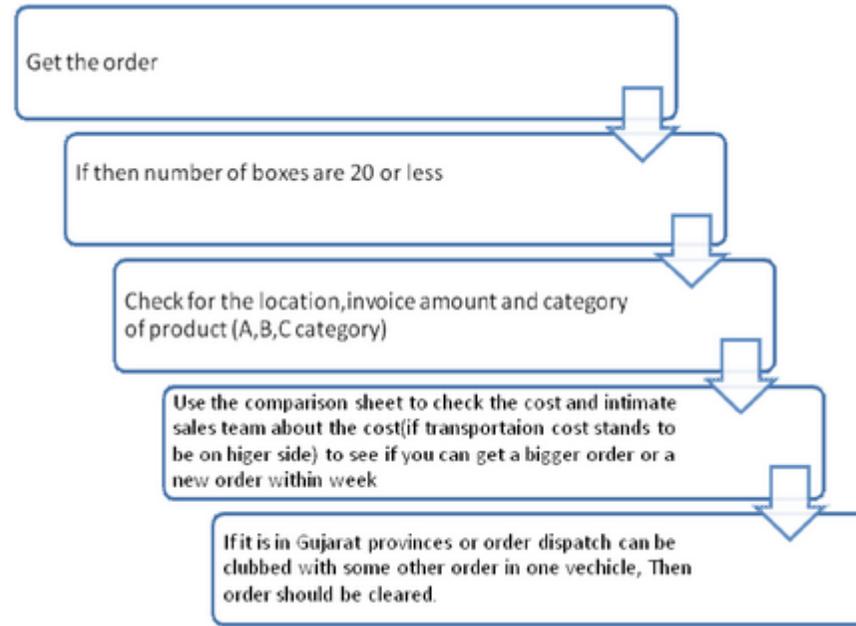
LMPPL will be in better position once ERP generates volume in their invoice. It could be carton wise or total volume of the dispatch, with that the error of manual calculation carried out by transporter (for every dispatch through professional carrier) during loading will be reduced and accurate cost will be paid.

### **Boxes Dispatched**

Boxes dispatched varied from 1 to 500 in number, due to different type of demands (Ref: Research data, based on the information available in the company database). The plant was dispatching any number of boxes without considering cost factor. Due to which LMPPL was incurring more cost than the average in transportation. Sometimes the cost incurred was very high.

## Proposed structure for dispatching less boxes,

Figure 2



(Reference : Author's own interpretation)

If the cost incurred is on higher side and benefit is less (if it is in C Category and profit margin is less) then dispatch team should have say on that and the order can be put on hold.

Once the standard procedure is implemented, it is mandatory to keep a check on the transportation cost and process. Hence, dashboard is created to keep a check on the cost incurred and if there is increase in cost it can be right away identified, and proper planning can be done before next particular location dispatch.

The dash board will provide with details for particular transporter's KPI as well as detailed dispatch figure.

Hence, this dash board has to be regularly updated and cross checked with the bills. Therefore, LMPPL can keep a check on its cost. Working of dashboard has been explained to dispatch, so any minor changes can be updated. The proposed structure for dispatching less boxes is depicted in the Figure2

## **Recommendation**

LMPPL is a leading supplier of mechanical cleaning products in India, an industry which is unorganized and dominated by small and regional players. LMPPL has been witnessing growth in sales. Good sales figure can only be maintained if LMPPL can distinguish itself with others in terms quality, cost and availability. Hence, SCM plays a very important role in LMPPL and transportation has to be spot-on in terms of cost and supply of product. If company incur high transportation cost for C category product with low profit margin to distant location, it will not make sense to dispatch it. So it is mandatory for dispatch team to look into each dispatch and take well informed decision. Following are my recommendations

1. Get the total volume from ERP system on invoice generated.
2. Before dispatching, cost analysis has to be done for professional carriers.
3. Whenever order of 20 boxes and less is put up, dispatch has to be considered in terms of cost and location and importance of particular sales.
4. Region wise dispatch plan has to be carried out.
5. Monthly evaluation of professional carriers and local transporter has to be carried out.
6. Monitoring of transportation cost should be carried out with dashboard provided.
7. More professional carrier should be roped in on annual contract, so for a particular region particular transporter can be used.
8. LMPPL should negotiate with their prime professional carrier in terms of cost because of the huge annual business LMPPL provides them and can consider other professional carrier such as Gati, which has been main transporter for southern region of LMPPL group of companies.

With the implementation of above recommendation LMPPL can bring down transportation cost considerably without incurring any extra cost.

## **References**

OECD. (2000). Logistic Integration in Asia Specific region. OECD.

Peter Boldtorff, R. (2007). Supply Chain Excellence.

Company Resources, Data collected from all available sources from company, basically from ERP and manual data base.