

A CASE STUDY OF SUPPLY CHAIN MANAGEMENT IN MANUFACTURING INDUSTRY

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Abstract: Today's business scenario is characterized by volatile demands, decrease customer loyalty, shorter product life cycle and mass product customization. Secondly these business conditions are changing rapidly. Supply chain is a network of facilities and distribution options that performs the procurement of materials, transformation of these materials in to intermediate and finished goods and the distribution of these finished products to customers. This brings out a situation that competitors might focus on developing superior supply chain management performance and accordingly that company would have to find or develop metrics to performance of supply chain.

Keywords: Case study, Inbound, Manufacturing industry, SAP.

I. INTRODUCTION

Supply chain management is a set of software solutions, internal business practice and lighting managed partner relationship that allows serving customer more efficiently by organizing and coordination in better way. The council of logistic management defines SCM as "the process of planning, implementing, and controlling efficient flow of materials, in-process inventory, finished goods and related information from point of order to point of consumption, for the purpose of conforming to customer requirements." SCM in the broadest sense involves the link between the supplier & assemblers to the dealers, ending with the customer.

SCM tries to optimize the supply chain activities and tries to improve the performance of total supply chain. SCM involves coordination of multiple players and managing multiple activities with multiple tools like JIT, TOM, VMI, networking, alliances, etc. to achieve the multiple objectives as cost reduction, improved quality, fast delivery and customer satisfaction of supply chain.

II. VALUE ADDITION AND SUGGESTION

Though, all the activities or procedures related to logistics & which comes under logistic department are self-explanatory and defect free but every action is always subjected to improvement. as far as stores & line feed of manufacturing is concerned is well coordinated & defect free, but the warehouse can be more yielding and productive if the special racks are allotted for special material or parts e.g. if all items are stored in a different racks under different designation than there will be confusion regarding loading & unloading of parts.

Scope of work is largely concentrated upon the logistic activities involved in manufacturing industries. industry involves basic divisions as:

- 1) Inbound,
- 2) Store & line feed,
- 3) Outbound.

All these divisions of logistics department are oriented and co-operated with each other in such a manner that delay in malfunctioning in any department will result in decreased output in the whole logistic system and to the loss of company.

II.1 INBOUND

Inbound is the very first stage in the logistic activity. The Inbound manager in the firm takes care of all the activity related to inbound department with the help of their team members. Inbound is the process of receiving the materials from the vendors. This process also includes moving the material in the company and supplying it to different divisions in company.

Inbound process starts when a part is take out from pallet, stored in storage racks, after a part is taken out a Kanban card is removed from this particular box & a new card i.e. part in use card attached to the box. The kanban card goes to the triggering box where it is triggered. After triggering, the information, this particular part starts using in the plant. This information goes to the particular inbound manager & vendor. After receiving daily pick up plan for vendor, the communication with vendor placing the schedule of the pickup plan and as per ordered vendor supply the parts. There are main three types of inbound processes carry out in any manufacturing industries.

II.1.1 Direct Inbound

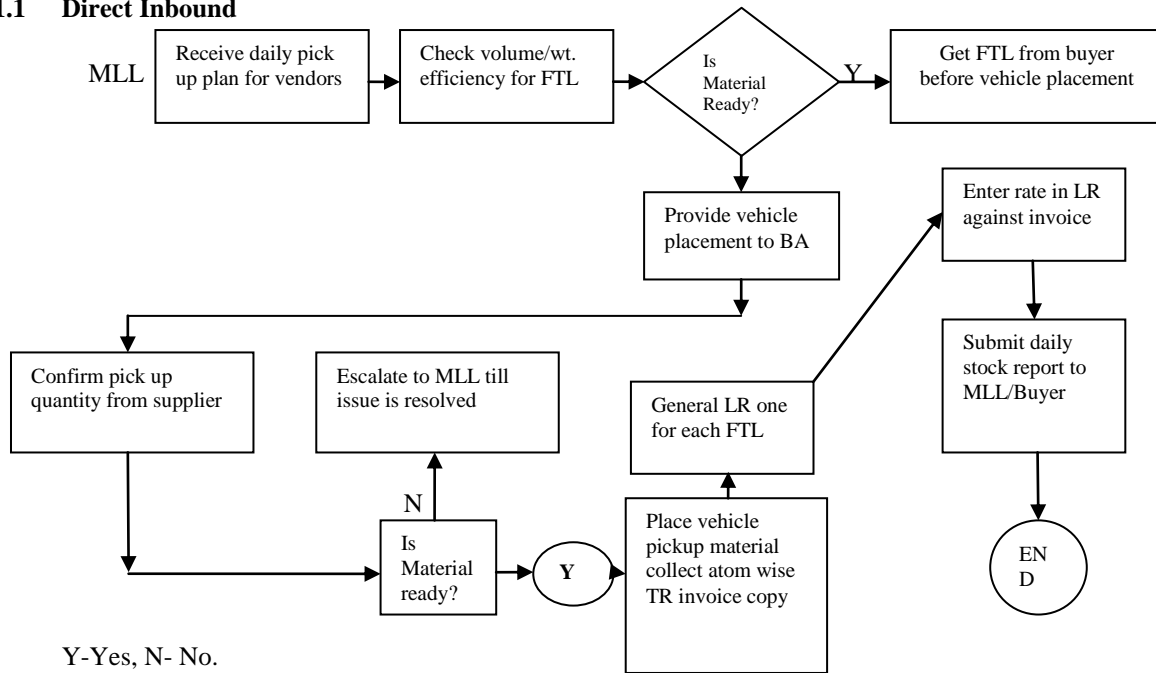


Fig.1: Flow chart for Direct Inbound

II.1.2 3PL Inbound

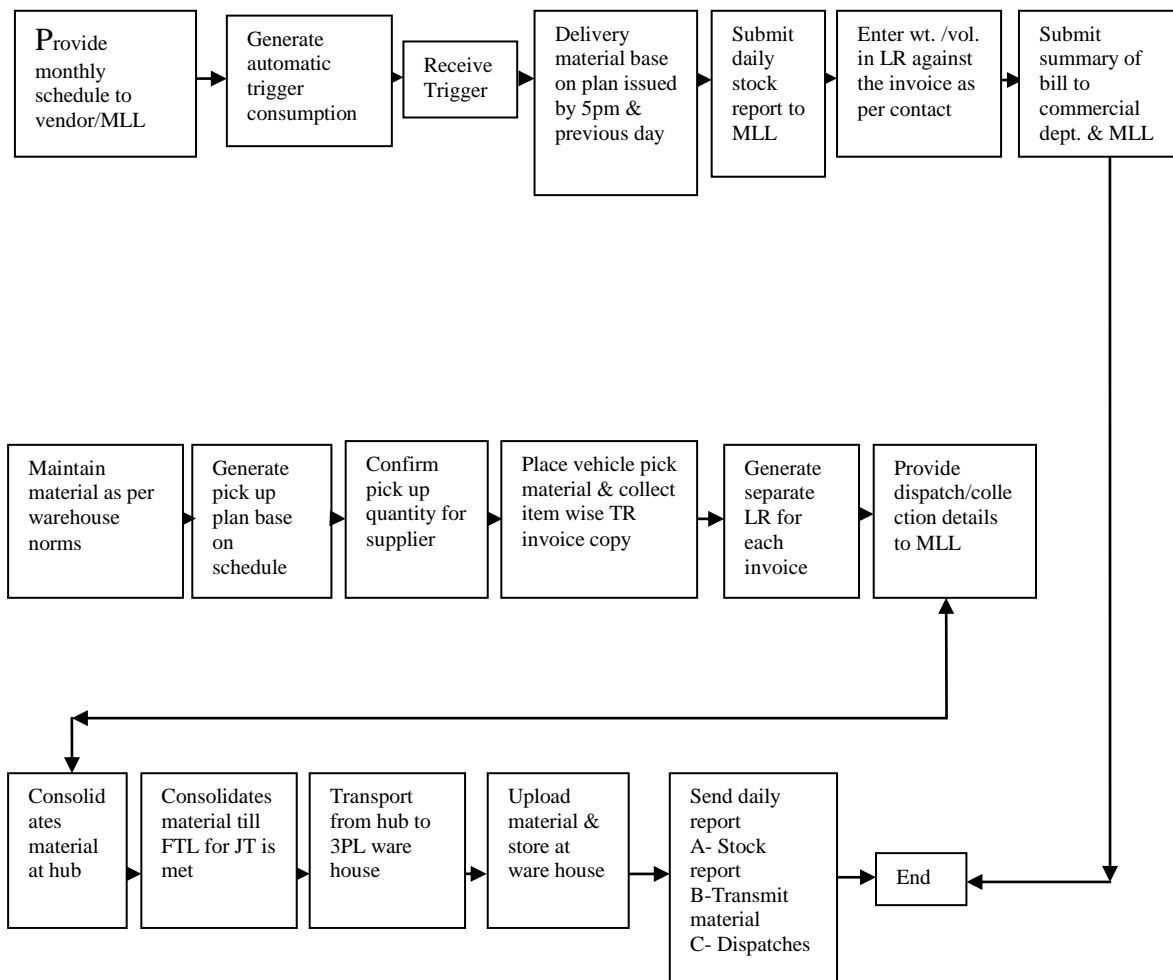


Fig.2: Flow chart for 3PL Inbound

II.1.3 Milk Run Inbound

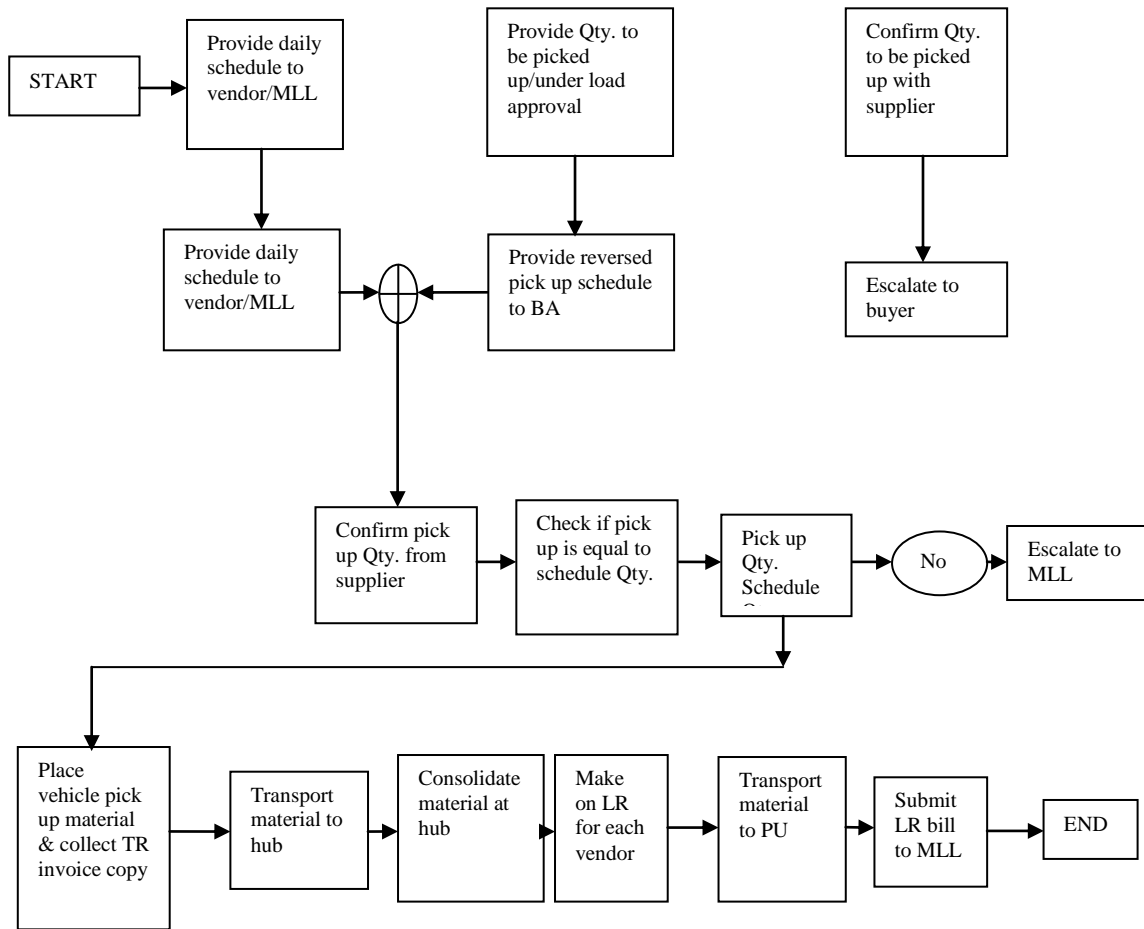


Fig.3: Flow chart for Milk Run Inbound

II. 2 STORE AND LINE FEED

Store and line feeding is the second stage in logistic activity. Entered material in the industry unloaded at DOC of each department i.e. tractor transmission, hydraulic & engine. After unloading at DOC, the quality & quantity of parts are checked. The other information like vendor name, location, part name, quantity of parts etc. also exists on part boxes. The information is stored in SAP software then material is stored in racks with the help of trolley, fork lift etc. this material is transferred with the help of overhead cranes & hoists. The hoist capacity is about 250kg and fork lift having the capacity of 1 tone. For parts storage and use KANBAN system is used. Also 5S system is used for proper arrangement and maintenance of parts in various industries.

KANBAN CARD

After storing of material kanban card is attached to the pallets. KANBAN system is a Japanese principle. In kanban system firstly the quantity of material is checked, and then availability of kanban card is checked. Invoice number & quantity is matched with the kanban quantity. If the material is not as per standard, it informed to the vendor. When all the procedure is completed the material is stored to particular unit & a kanban card is attached to it. This stored material is sent to line feeding whenever necessary with the help of fork lift & overhead cranes.

When these parts from the rack are used on line, the kanban cards attached are removed from it and part in use card is attached to the part box. After triggering the kanban card it is kept in a “kanban box.” As soon as the kanban card is triggered the information gets stored in the Computer i.e. in SAP software. This information is available for buyer, vendor & head of the department. As per information available in SAP, the head of department placed an order to the vendor.

II.3 OUTBOUND

This is the last stage of logistic activity which not only includes dispatch of finished products in to the market but also its quality check. Outbound includes the progress of products after it has been completed with its final stage in manufacturing. After the product has been manufactured it is then sent to the custody transfer (C.T.) where it is subjected to manual inspection by custody transfer officer. Manual inspection involves the checking of product for any

defect which can be easily detected such as colour of parts, dent or any missing part, etc. If the product is found to be faulty, it is set back to respective division for rework. After passing its quality check in C.T. it is moved to the DOC yard for numbering. Now, these numbered products are ready for dispatch & drive to the dispatch segment where these are transferred to various locations of markets with the help of trailers.

If the outbound division is lagging in any section or delivery of product then company may suffer a loss in lacks which is not desirable. Hence, co-ordination of various departments with each other and their proper regulation will help in maximizing the profit of the company.

III.CONCLUSION

Many quantum changes are taking place in business environment with complexities involved in sustaining, surviving & succeeding. The supply chain management (SCM) helps to develop the speedy, cost efficient and reliable supply chain. Performance measurement of SCM is essential as products need to be produced as per customer demand cycle to achieve customer satisfaction. SCM has a tremendous impact on the way manufacturing industries are developing in recent time. Very few industries are employing SCM as efficiently as it should be and lot of work is need to be done in SCM in India

REFERENCES

- [1] A. K. Chaital and D. S. Rajput, "New Development on SCM" 1st International Conference on Logistic and SCM, Allied publication Ltd. New Delhi, Aug.2001.
- [2] R. P. Mohanty and S. G. Deshmukh, "Essential of Supply Chain Management" Phoenix Publishing house Private Ltd. New Delhi, 2001.
- [3] R. V. Ramakrishnan, "SCM performance to be measured" 1st International Conferenc on Logistic and SCM, Allied publication Ltd. New Delhi, Aug.2001.
- [4] Salma Ahmed. Logistic SCM India Management. S. Chand, 1999.
- [5] Sunil Chopra and Peter Meindel. Supply Chain Management. Prentice Hall, 2001.