CHAPTER IV

SUPPLY CHAIN MANAGEMENT - GLOBAL DISTRIBUTION
NETWORK PROCESSES IN PHARMA INDUSTRY

An Overview of Distribution Operation
The Distribution Operations in DR Reddy’s Laboratories can be divided into National and International. Distribution to stockiest in the National Operations is handled through Carrying & Forwarding Agents who work under the control of C&FA Management Team.

1. Distribution – National
The Manufacturing Units supply materials to Central warehouse that in turn send the same to C&F Agents / Depots through Stock Transfer. These agents / depots distribute the products to the stockiest as per the orders placed by them. Retailer gets their requirements from the stockiest.

1) Planning
At the organizational level, the Demand Planning Department, in conjunction with the marketing department prepares a Rolling Sales Forecast for the current and ensuing three months. This is further converted into Distribution and Resource Plan. This forms the input for the Manufacturing Units for Production and Procurement Planning and for the Global Distribution Centre for Distribution Planning.
2) **Order Processing - National**

The C&F Agent / Depot enter the order received from the stockiest in SAP. The order is accepted if the required conditions for order acceptance are fulfilled.

3) **Distribution Resource Planning (DRP) Execution**

Based on the DRP and stock availability, the DRP execution team prepares a stock transfer order and a packing order against each Purchase order, which is forwarded to Warehouse. Simultaneously, planning for logistics is also carried out. The consignments along with all documentations are forwarded to the C&F Agent / depot.

4) **Carrying and Forwarding Agents (C&FA) and Depot Management**

C&F Agents are appointed for distribution of the products to the stockiest. As on today, there are 29 C&F Agents and 3 Depots. C&F Agents are selected on the basis of the defined criteria. Their activities mainly consist of acceptance of order from stockiest, communicate the same to Marketing and Central warehouse, receive materials, store them under controlled conditions as specified and distribute to stockiest as per their respective orders. They are responsible for undertaking all the above activities as per the guidelines given.

5) **Warehouse**

The products manufactured at various locations, meant for National Distribution, irrespective of the facility, in-house or contracted, are first shifted to the Central warehouse located at Hyderabad. They are stored according to the requirements for storage till they are dispatched to the respective C&FAs or Depots.
There is also a bonded warehouse for some of the export items.

2. Distribution – International
This activity is sub-divided into Generics and International Distribution. Generic is applicable to Europe and North America and International Distribution to the rest of the world.

A) International
In international market, the country managers / distributors stationed at the respective locations receive the orders from customers and forward them to Regional Logistics Coordinator. It is then forwarded to finance for dispatch clearance after receipt of which the order is forwarded to respective factory warehouse for dispatch. Simultaneously, logistics planning is also carried out. Unlike in the case of National, dispatches here are normally done from the respective factories. The handling of consignments from the stage of receipt at the Airport or shipping port is handed over to customs house agents and freight forwarders who are also appointed by the Logistics Team. Receipt of consignment at the port of destination is first confirmed by the custom house agent.

1) Samples and Promotional Materials
Finance Department of DRL prepares a yearly forecast for distribution of samples based on which monthly / quarterly distribution plans are prepared and submitted to Demand Planning Team. Samples received from the respective manufacturing units are distributed according to the dispatch plans. Receipt, packing and distribution of samples is handled by an outsourced service provider. Distribution plans for promotional materials are given by the Product Management
Team. Procurement, packing and distribution is undertaken by the service provider.

2) Outsourced services
The following activities are outsourced viz a) Carrying and forwarding b) Customs house clearance & freight forwarding c) Transportation d) Handling of samples and promotional materials.

Chart4.1 Global Distribution Network—Overall activity

Source: Composed by the Researcher

Documents pertaining to the System
Systems as described in the following sections have been established so as to streamline the operations of the Distribution network. To bring in consistency in operations, various standard operating procedures have been established and documented wherein, the methodology for the activities controls where required and the records to be maintained pertaining to each activity have been defined.
Control of Documents

To ensure integrity, adequacy, unique identification including revision status, availability of pertinent documents at the points of use including external documents, a procedure for Control of Documents and Records has been established.

Control of records

Records, which serve as an evidence of the system being followed have to be legible, retrievable, preserved and appropriately identified with a defined retention period. Procedure for Control of Documents and Records defines the methodology adopted to ensure all the above.

OPERATIONS MANAGEMENT AND CONTROL

The operations of Global Distribution Centre can be classified as
1) Distribution – National
2) Distribution – International
3) Distribution of Samples and Promotional Materials

The processes involved in each operation are depicted in the following sections. Among the processes pertaining to various operations, documented procedures are established for certain critical processes, which define the methodology to be adopted, controls to be exercised and records to be maintained.
Out of the above activities, Demand Planning and Manufacturing are external functions. C&FAs are service providers and the activity is considered outsourced and is under the control of the C&FA Management Team.

**Order Review and Processing**

Though they are not the end users, stockiest are considered as the customers. Stockiest place their orders on the Carrying. Order review process is automated through SAP, which either accepts or rejects the order based on the acceptance criteria. Further processing of the order is carried out by the Logistics Team.
External services utilized for National Distribution

The external services utilized for Distribution – National are Carrying and Forwarding and Transportation. Service providers are selected based on their capability to undertake the service as per the defined criteria.

The performance of service providers is monitored continuously to ensure consistency of service based on performance model of each category of service provider.

Identification and Traceability of Materials under storage and dispatch

All products as well as the packages containing them are identified with the name of the product, batch No. and date of expiry. The documents accompanying each consignment also carry these details. Each product can be traced to its manufacturing unit through these details.

Preservation of Products

Each product received from Manufacturing Unit or returned material from C&FAs are handled and preserved under controlled conditions as required in the warehouse. Materials are stored batch-wise in racks or pellets. Segregation of good products from damaged or expired products is ensured. Where special storage conditions are specified, storage is done in appropriate zones. Records of materials received, dispatched and materials sent for destruction are maintained. Stock checking is carried out once a month.
Out of the above activities, Clearance and Manufacturing unit Warehouse are external. Customs House clearance and Freight Forwarding are outsourced activities.

**Order Review and Processing:**
In International Markets, orders are received from customers through Country Managers or distributors. For accepted orders, Order acceptance is communicated to the Country Manager. Records of validation are maintained. The respective Regional Logistics Coordinator (RLC) is responsible for all communications with the respective Country Managers / Distributors and customers.

**External services utilized for International Distribution**
The external services utilized for Distribution – International are Customs House Clearances, Freight Forwarding and Transportation. Service providers are selected based on their capability to undertake the service as per the defined criteria.
Order Execution
Planning is done order-wise. For each order, after ascertaining the fulfillment of statutory requirements pertaining to the country of destination and submission of Proforma Invoice where required, a dispatch schedule is prepared by RLC and forwarded along with the SAP order reference and any other clearances from the country of destination to the respective Manufacturing Unit for dispatch from their warehouse.

Execution and Logistics
The manufacturing Unit organizes dispatch to the sea or air port as advised by the logistics.

Regional Logistics Coordinator sends pre-shipment documents to Customs House Agent / Freight Forwarder who organizes booking by Air or Sea as required. The Flight or Sea Schedules along with the details of consignments and post shipment documents are communicated to the Country Manager / Distributor. Confirmation of delivery of consignment at the destination is received from Customs House Agent / Freight forwarder. Once a month, the details of receipt of consignments are reconciled with the respective Country Manager / Distributor.

Identification & Traceability of Materials under storage and dispatch
All products as well as the packages containing them are identified with the name of the product, batch No. and date of expiry. The documents accompanying each consignment also carry these details. Each product can be traced to its manufacturing unit through these details.
Preservation of Products
Each product received from Manufacturing Unit to bonded warehouse is handled and preserved under controlled conditions as specified. During transit, where it is not possible to maintain the required conditions, the total transit time will not exceed 24 hours.

Chart 4.4 Distribution of Samples and Promotional materials - Process Planning

Source: Composed by the Researcher

Demand Planning and manufacturing activities are external to Distribution network. Distribution is outsourced and is carried out by a service provider.

Determination of Requirements of Samples and Promotional Materials
Finance department prepares the yearly forecast for distribution of samples and promotional materials based on promotional activity. As this is not based on customer orders,
the Project Management team determines which samples and promotional materials are to be supplied to whom and when.

**External services utilized for Distribution of samples and promotional materials**

Distribution of samples and promotional materials is entrusted to a service provider selected based on their capability to undertake the service as per the defined criteria.

**Distribution - Samples**

**Planning**

Based on the yearly forecast of Finance Department, quarterly and Monthly rolling plans are prepared and furnished to Demand Planning Team. Dispatch plans given by Product managers / GTMs are compiled division-wise and sent to service provider for organizing distribution.

**Execution**

Based on the plans given by the demand planning team, Manufacturing Units supply samples to service providers. Service providers undertake repacking as required and organize distribution as per the dispatch plan. The day-to-day dispatches are monitored by the I/C Samples and Promotional Materials and communicated to the respective marketing Team members.

**Distribution of Promotional Material**

For Promotional Materials, the same procedure is followed except that the materials as well as the packing materials are procured through sourcing department.
Identification and Traceability of Materials under storage and dispatch
All samples as well as the packages containing them are identified with the name of the product, batch No. and date of expiry. The documents accompanying each consignment also carry these details. Each product can be traced to its manufacturing unit through these details. Traceability is not requirement for Promotional Materials.

Preservation of Products
Each consignment of samples received from Manufacturing Unit to service provider’s warehouse is handled and preserved under controlled conditions as specified.

Monitoring and Measuring Devices
The only monitoring and measuring devices used at Central warehouse are temperature indicators and weighing machines. Contracts are entered into calibrating agency for temperature indictors and the weighing machines are calibrated by Department of weights and Measures. Records of calibration are maintained. Performance monitoring, analysis and improvement In order to assess the level of conformance of the operations and of the system to the planned arrangements as well as the standard, effectiveness of the system in achieving the objectives aimed at and identify areas for improvement, the following processes have been established for measurement, monitoring, analysis and improvement.
Monitoring and Measurement

Measurement of Customer satisfaction
Information relating to customer perception as to what extent has met their requirements is monitored by various means such as
a) Feedback forms and
b) Customer complaints

The information collected shall be analyzed to assess the present level of satisfaction, identify areas needing attention and improvements required to the services. The results of analysis and actions taken are reviewed in Management Review Meetings (MRM).

Monitoring and measurement of processes
Parameters, which indicate the effectiveness, efficiency of the processes, Key Performance Indicators, are identified for measurement. Based on the historic data, objectives are fixed and reviewed in every Management Review Meetings (MRM). At the end of every month, the process measurement data is collected and analyzed. Trends are noted and requirement of any corrective measures identified and planned. The results of such actions taken as well as the progress towards achievement of objectives is monitored and presented in Management Review Meetings (MRM) for review. The selection of measurements, analysis, setting objectives and monitoring is described in the Standard Operating Procedure for Measurement and Analysis;

Monitoring and measuring of product
Product verification is done at the time of receiving materials in warehouse or at the service provider in the case of
Promotional Materials, to ascertain whether the materials received are conforming to those specified in the DC / Purchase order. Deviations noticed if any are brought to the notice of the sender and replenishment or adjustment is done. Records of the results of verification are maintained.

Control of Non-conforming Product
Non-conformities can occur in any of the following areas, viz
1. In warehouse – damaged, expired and wrong receipt materials
2. In documentation – entries not matching with the actual data
3. Logistics – loss, damage of materials
4. Export documentation – non-availability of specified documents, incorrect documentation and
5. Samples and promotional materials – damaged and expired samples, samples not matching with specifications, promotion materials not matching the specified requirements, received in damaged condition. The procedure to be followed for the control of the non-conforming product is described in SOP for Control of Non-conforming Product

Analysis of data
The data on key performance indicators, product non-conformities, customer complaints, audits and customer survey results shall be recorded and analyzed through application of suitable techniques to evaluate where continual improvement of the effectiveness of the quality management system can be made.
Continual improvement
Global distribution network aims to continually improve the effectiveness of the Quality Management System through the application of the various methods enumerated above Viz.; analysis of data, corrective actions, preventive actions, quality policy and objectives and audit results.

Corrective action
The organization shall take corrective action in line with SOP for Corrective and Preventive Action to eliminate cause of non-conformities in order to prevent recurrence. Corrective actions shall be appropriate to the effects of the non-conformities encountered.

Preventive action
Documented procedure SOP for Corrective and Preventive Action describes the steps taken to identify and eliminate the potential causes and non-conformities and prevent non-conformities before they occur.

Transportation
Transportation plays a major role in the supply chain as well as key transportation-related decisions that supply chain managers need to make.

Role of transport in the Supply Chain
Transportation moves the product between different stages in a supply chain. Like the other supply chain drivers, transportation has a large impact on both responsiveness and efficiency. Faster transportation, whether in the form of different modes of transportation or different amounts being
transported, allows a supply chain to be more responsive but reduces its efficiency. The type of transportation a company uses also affects the inventory and facility locations in the supply chain. Dell, for example, flies components from Asia because doing so allows the company to lower the level of inventory it holds. Clearly, such a practice increases responsiveness but decreases transportation efficiency because it is more costly than transporting parts by ship.

**Role in the Competitive Strategy**

The role of transportation in a company's competitive strategy figures prominently when the company is considering the target customer's needs. If a firm's competitive that customer is willing to pay for this responsiveness, then a firm can use transportation as one driver for making the supply chain more responsive. The opposite is true as well. If a company's competitive strategy targets customers whose main decision criterion is price, then the company can use transportation to lower the cost of the product at the expense of responsiveness. As a company may use both inventory and transportation to increase responsiveness or efficiency, the optimal decision for the company often means finding the right balance between the two.

**Components of Transportation Decisions**

There is a need to identify key components of transportation that companies must analyze when designing and operating a supply chain.

**Mode of Transportation**

The mode of transportation is the manner in which a product is moved from one location in the supply chain network to
another. Companies have six basic modes from which to choose:

- **Air:** the most expensive mode but also very fast
- **Truck:** a relatively quick and inexpensive mode with high levels of flexibility
- **Rail:** an inexpensive mode used for large quantities
- **Ship:** the slowest mode but often the only economical choice for large overseas shipments
- **Pipeline:** used primarily to transport oil and gas

Each mode has different characteristics with respect to the speed, size of shipments (individual parcels to pallets to full trucks to entire ships), cost of shipping, and flexibility that lead companies to choose one particular mode over the others.

**Route and Network Selection**

Another major decision managers must make is the route and network along which products are shipped. A **route** is the path along which a product is shipped, and a **network** is the collection of locations and routes along which a product can be shipped. For example, a company needs to decide whether to ship products directly to customers or to use a series of distribution layers. Companies make some routing decisions at the supply chain’s design stage, and they make others daily or on a short-term basis.

**In House or Outsource**

Traditionally, much of the transportation function has been performed in house. Today, however, much of transportation (and even entire logistics systems) is outsourced. Having to choose between bringing parts of transportation in house or
outsourcing leads to another dimension of complexity when companies are designing their transportation systems.

**Overall Trade-off: Responsiveness versus Efficiency**
The fundamental trade-off for transportation is between the cost of transporting a given product (efficiency) and the speed with which that product is transported (responsiveness).