

Recent Trends in Distribution Management

In addition to securing the correct strategic solutions to distribution, it is also important to ensure that the process is efficient. Examples of late, damaged, incorrect or wastefully small deliveries, of vast stockpiles of unsold products, and of raw materials or finished goods simply going missing are manifestations of a lack of management concern with the process. It was serious delivery problems with Adidas' successful range of sports footwear that gave Reebok and Nike their chance to increase their share of the European market in the late 1980s.

As a result of these problems, many organisations now implement *physical distribution management (PDM)* systems. PDM is concerned with the design and operation of efficient systems for the inward movement of raw materials to the point of manufacture, and for the outward movement of finished goods to the consumer.

1. Just In Time (JIT)

The influence of PDM can be seen in the increasing importance of *just-in-time (JIT)* systems. Such systems involve the delivery of raw materials or components to factories, or of finished goods to chain retailers or wholesalers 'just in time' to be used in manufacture, or put on display for sale. The system removes the need for extensive storage areas either at the factory or behind the scenes in a retail store. JIT is often claimed to have replaced 'just-in-case' storage systems, where large quantities of raw materials or finished goods were held in reserve - just in case they were suddenly needed.

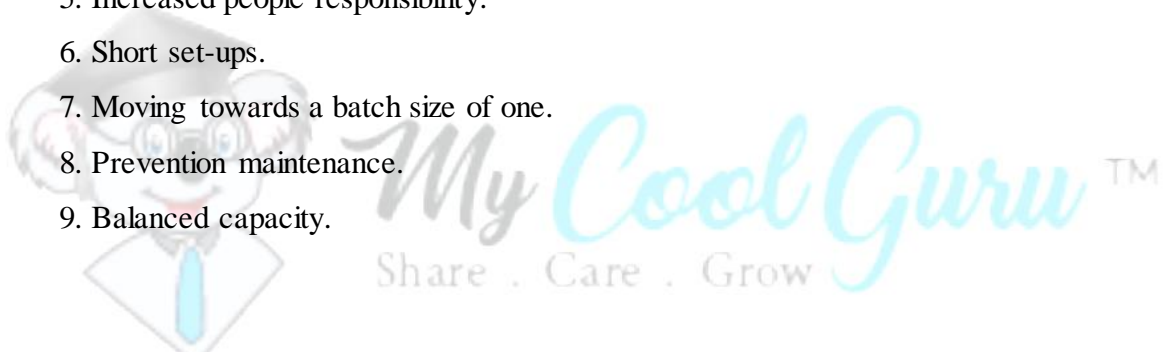
The Japanese first introduced JIT, and later, the Americans adopted it over a period of time. The U.S. companies that successfully used this concept were IBM, Xerox, Apple, and General Electric. In India, many companies successfully use JIT.

Aspects of JIT:

1. JIT purchasing seeks to match as closely as possible the usage of raw materials in production with the delivery of materials. This is done to keep the stock at near-zero level.
2. JIT production takes place when there is actual consumer demand for output. This means that work-in-progress (W.I.P.) and finished goods stock levels are at a minimum.

Advantages of JIT:

1. Elimination of waste.
2. A move towards zero inventories.
3. An emphasis on perfect quality.
4. Stable production rates.
5. Increased people responsibility.
6. Short set-ups.
7. Moving towards a batch size of one.
8. Prevention maintenance.
9. Balanced capacity.



2. Reverse logistics

Most of the manufacturers are taking a second look at their supply chains. For many companies, manufacturing no longer ends with the consumer or the supplier. Through Reverse Logistics they are taking it a couple of steps further. Environmental norms will only get stronger in the coming years. With environmental lobbies gaining in strength, consequently, the consumer does not hesitate to ensure that any waste is disposed in an eco-friendly manner. To meet such demands, managers are using reverse logistics to make their manufacturing cycle more efficient, eco-friendly and profitable.

Once the consumer has used the product, the manufacturer still has a couple of things to do. For example, what happens to that bottle of Coke? What happens to those empty drums of fuel and chemicals at the factory? Reversing the flow of material (back into the supply chain), post-consumption, is the idea behind reverse logistics. This should not be restricted to the consumer

interface alone, but must also take place at the manufacturing and procurement level. The benefits are:

- It reduces the quantum of material used in production and distribution. For instance, digital cameras have eliminated the need for processing film, which involved huge environmental costs.
- It makes goods lighter for easier transportation. Companies such as IBM are producing mainframes that are smaller, use less material and are cheaper to transport.
- It saves huge costs due to usage of recycled raw material in production leading to increased margins. Lead used in car batteries is expensive and also difficult to dispose in an environmentally friendly manner. This is why battery manufacturers have started collecting used batteries and are recycling the lead in them. With the production costs cut significantly, the customers now get cheaper batteries.
- It changes in manufacturing cycles that results in reduction of the amount of waste produced.
- Reusable packaging material reduces amount of garbage and increases public hygiene.

Reverse logistics holds opportunities for companies to recover the investments that they have made in manufacturing. Being proactive about reverse logistics is beneficial in the long-term.

3. Fourth Party Logistics

Outsourcing is one of the most important supply chain functions. Outsourcing of the supply chain to a logistics provider allows companies to focus on customer service while transferring some or all of the logistical activities mentioned hereunder. The inventory management programs are:

- Advanced exchange.
- End-of-life parts management.
- Parts life-extension programs.
- Parts sales.
- Distribution services.

- Warehousing
- Transportation
- Customs

Traditionally, suppliers and distributors used to manage the above functions all by themselves. However, with the growth of e-commerce and e-business, though the process and transaction time have been considerably streamlined, customers demand an ever-more sophisticated approach. Today, speed, information, and convenience have become the order of the day. This is the necessity that has given birth to the concept of fourth party logistics (4PL).

Fourth Party Logistics is the complete holistic logistics solution that Third Party Logistics (3PL) was supposed to be. A 4 PL logistics provider is one who can bring about the confluence of its technology, resources and skills with that of another provider to deliver a global, seamless logistics solution. 4 PL providers have a network that transcends borders and industries. They also provide consulting services to clients when required.

How is it different from 3PL?

Third party logistics providers are more focused around asset management. Although they were touted to be the last word in logistics management, 3PL providers have become too focused on warehousing and transportation services and have very few value-added services or management expertise thus giving rise to the new paradigm of 4PL providers.

4. Direct Marketing

Mass marketers have typically tried to reach millions of buyers with a single product and a standard message communicated via the mass media. Consequently, most mass marketing communications were one-way directed at consumers rather than two-way with consumers. Today, many companies are turning to direct marketing in an effort to reach carefully targeted customers more efficiently and to build stronger, more personal, one-to-one relationships with them.

Basically, direct marketing is a form of non-store retailing that uses advertising and promotion to directly contact customers who in turn, purchase products without going to a retail store.

Forms of Direct marketing:

Face-to-face selling:

Most companies today rely on face-to-face selling through a professional sales force, manufacturer's representatives and agents.

Direct-mail marketing:

It consists of the company sending an offer, announcement or reminder about a product to a person at a specific address.

Catalogue marketing:

Marketers send catalogues of their products to a select list of customers. For premium products, they may collect the database of the upper middle-class customers who are sociable and go to clubs, from the membership lists of those clubs.

Telemarketing:

It consists of using the telephone to sell directly to consumers.

Direct-response television marketing:

This has two forms: direct-response advertising or infomercials, and home shopping channels.

Kiosk marketing:

Kiosks are information and ordering machines that direct marketers place in stores, airports, and other locations. An example of this is Lakme, which unveiled interactive kiosks called Beauty Zone that allowed women to choose products that suit them. They were placed at malls with high traffic like Crossroads and Shoppers' Stop.

Online marketing:

It involves online channels and electronic commerce and is usually conducted through interactive online computer systems, which electronically link customers with sellers.

5. Gray Marketing

Manufacturers distribute products to wholesaling middlemen with the intention of selling them to certain markets. Sometimes, the products distributed through the wholesalers are not authorised by the manufacturer. This unauthorised form of distribution is known as “Gray Marketing” and is prevalent in many countries.

Gray marketing arises when a reputed brand carries different prices in different circumstances. It usually involves products manufactured in one country and destined for sale in another country.

The Process

Gray marketing takes many forms. Usually, a wholesaling middleman, such as an import or export agent, purchases a product made in one country and agrees to distribute it in a second country, but instead diverts the product to a third country. Because the product typically is sold at a discount in a reputable outlet, not by a black marketer from the trunks of cars, it is not apparent that normal distribution has not been used.

Why ‘Gray marketing’ is harmful?

- Time and money spent to promote the product is wasted, as it is not spent for the purpose dedicated.
- Harmful to other distributors as they lose out on their sales.
- Demotivating factor for the distributors.

- Disrupts a producer's distribution and pricing strategies.
- Consumers would doubt the company's credentials and there is a threat of brand equity dilution.

A disappointing feature is that these distributors wind up the sale without warranties or service contracts. This causes problems when some consumers possess a different version because they were able to purchase products, which otherwise they would not be able to afford.

Another feature is that some manufacturers in their hunger to earn maximum profits and sell excess output can deliberately be party to such unethical marketing. The saddest part of the story is that it is harmful for the whole economy.

6. Multi-Level Marketing Model (MLM)

Multi-level marketing refers to direct marketing through an ever-increasing number of direct distributors. Independent distributors sell products directly to the consumers, appoint them as new distributors and train them. The distributor earns commission at two levels, first is his own commission and second, a proportion of commission earned by other distributors appointed by him. None of these distributors are employees of the company. Distributors are not allowed to sell these products to retailers. The company saves about 25% of realisations by eliminating retail levels in the channel, which is shared with the distributors. Personal interaction is not only convenient, but also adds value as the customer gets valuable advice on the product and how to use it. This helps in creating awareness and removing misconceptions.

In India, companies like Amway (household appliances like cleaner and personal care like toothpaste), Tupperware (household appliances like plastic containers), Modicare (household convenience products), Oriflame (cosmetic products) and Avon (cosmetic products) are quite successful using MLM concept. The established traditional companies like Hindustan Lever has also recently launched a new personal product brand Aviance, which is sold directly to consumers exclusively by trained beauty specialists.

7. Supply Chain Management (SCM)

An important function of the marketing channel is the joint effort of all channel members to create a supply chain, a total distribution system that serves customers and creates a competitive advantage. Supply chain management refers to long-term partnerships among marketing channel members working together to reduce inefficiencies, costs, and redundancies in the entire marketing channel and to develop innovative approaches, in order to satisfy customers.

a. Supply chain management involves manufacturing, research, sales, advertising, shipping and, most of all, cooperation and understanding of trade-offs throughout the whole channel to achieve the optimal level of efficiency and service.

b. Whereas traditional marketing channels tend to focus on producers, wholesalers, retailers, and customers, the supply chain is a broader concept that includes facilitating agencies, such as component parts suppliers, shipping companies, communication companies, and other organizations that take part in marketing exchanges.

Supply chain management is helping more firms realize that optimizing the supply chain costs through partnerships will improve all members' profits. Supply chains start with the customer and require the cooperation of channel members to satisfy customer requirements. Technology has dramatically improved the capability of supply chain management on a global basis. Supply chain management should not be considered just a new buzzword. Reducing inventory and transportation costs, speeding order cycle times, cutting administrative and handling costs, and improving customer service—these improvements provide rewards for "all" channel members.

Location

The entire supply chain is analysed with reference to the location of processes involved. Right from sourcing of raw materials to the assembling stage and finally when it reaches the end-user, the chain involves multiple processes at different locations. When the chain is broken down on the basis of location, potential risks and opportunities can be identified. To identify risks at various stages of the chain, companies can take the location or geographic view.

Process

The process perspective involves evaluating processes like sourcing, manufacturing, assembling and testing, distribution and installation. Each process stage is evaluated individually, and subsequently in conjunction with other processes. The analysis can reveal bottlenecks both for the process and within the process.

Product

Supply chain management is driven by the demand possibilities that forecasting uncovers. The potential for demand-supply mismatch is higher when there are multiple demand possibilities. Predicting demand for all possibilities can be a daunting task for the channel manager. If the management decides to stock for all possible scenarios, the inventory costs will shoot up.

The product view provides an insight into the sequence of the chain that goes into making of the product or service offering. The manufacturing time, value of added components and the manufacturing lead-time are among the factors considered.

Order

The order view involves analysing the processes before and after an order is received. There are two scenarios:

1. Activities in anticipation of an order
2. Activities in response to an order

Striking a balance between both these activities is critical. The decision will have significant impact on sourcing and storage of raw materials, work in progress and finished goods inventory.

The seven dimensions of SCM

1. Segmentation: Traditionally manufacturers classified segments according to industry, product or even trade channels. However, when a one-size-fits-all channel approach is displayed, the relative value of each segment cannot be distinguished. Segmenting on the

basis of the consumer needs can deliver superior value to the consumers. Creating segment specific offerings increases attractiveness of the respective segments.

2. **Logistics:** In most cases, companies design their logistics network to meet the average requirements of all the segments. In few situations, the most important clients' requirements drive the logistics structure. Manufacturers however, are shifting from traditional methods and designing complex structures to support the necessary strategy. This involves even forging alliances with third party logistics providers.
3. **Demand forecasting:** Demand forecasting, traditionally has been conducted differently by different functional departments. Manufacturing and sales, for instance, has a different orientation towards forecasting. While sales department does it purely on the basis on estimated sales basis, manufacturing may do it on the basis of market demand. This triggers off incompatibility with the supply chain. Any mismatch and the inventory and production schedules will go haywire.
4. **Speed across the chain:** Companies should challenge traditional views that lead times should be fixed. In fact to be more adaptable to market changes, companies should have flexible schedules. The conversion time from raw materials to finished products should be short. This also allows companies to reconfigure products in line with market changes, especially in case of technological products.
5. **Supplier relationships:** High costs are words most manufacturers dread. The most common measure adopted to counter high costs is tightening of procurement costs. Companies allow suppliers to compete and choose the supplier with the best price advantage. This pays off in the short run, at the cost of supplier relationships. If the suppliers are treated as partners, common goals can be formed and savings can be achieved collectively. Strategic supplier alliances, outsourcing and short-term competitive bids combined with long relationships can lead to cost savings.
6. **Technology:** Network connectivity creates opportunity not only to control transaction costs, but also to collect information for improved inventory deployment. This data is crucial in improving customer service. Continuous flow of information can cut costs and ensure better utilisation of assets.

7. **Performance measures**: Finally, the output should be measured on two parameters – service and profitability. Service can be measured in terms of time taken for order fulfilment, accurate billing and the condition of the goods on delivery.

Strategic Planning and optimisation of SCM

Supply chain strategic planning is a decision-making tool adopted by companies that think forward. It is neither execution, nor is it re-engineering. Operational supply chain strategy remains the weak link in the market, mainly due to the degree of difficulty involved in using sophisticated models and complicated algorithms. Supply chain planning most of the times grows and merges with the IT-based demand planning-focused solutions.

Advanced planning and scheduling (APS) vendors in the area of supply chain planning have put together solutions that help planners make better decisions. For planners, APS promptly analyses the implications of alternative decisions. APS systems provide information about whether plans are reasonable. For example, they find out if the planners have exceeded resource constraints or have resulted in inadequate performance. They do it by performing 'what-if' simulation analyses.

There has also been a recent trend to embed sophisticated optimisation logic into APS suites to improve decisions of supply chain planners. If used successfully, this type of optimisation promises to drastically improve a company's supply chain performance in a variety of areas:

- Improved product margins
- Better return on assets
- Reduced supply chain costs and cycle times
- Increased manufacturing throughput
- Lower inventories
- Maximising customer service
- Minimising lateness

There are three ways to solve and reach a performance level comprising the above:

- **Feasible Solution**: It satisfies all constraints of the problem.

- Optimum Solution: It is the best feasible solution that achieves the objective of the optimisation problem. Though some problems yield more than one feasible solution, there is usually only one that is optimum.
- Optimised Solution: It is a solution that partially achieves the objective of the optimisation problem. It is not the optimum or best solution, but is a satisfying or reasonable one. This is usually one of the best feasible solutions. For optimisation problems that have no feasible solutions, this could be one of the best infeasible solutions! For example, in a resource-constrained condition, it may be a solution that is infeasible because it does not meet all customer due dates, but it may minimise operating costs.

Two most important elements of supply chain optimisation are models and data. A plan's value depends a lot on the quality of both. Models describe the relationships among decisions, objectives, and constraints that are often expressed in the form of mathematical equations. If a planning process is based on a model that sparsely represents reality or if the data used in a model is wrong, the solutions developed by the optimisation will not be meaningful or executable. The two elements are both required because:

- Data is always needed to populate a model.
- A model should not be built with a requirement of data that is not available.

Another important element of an optimisation process is the solver, which solves for an optimised solution. The planning model determines the best solver. Models, data, and solvers together represent key elements of optimisation-based planning. While a feasible and realistic plan is of paramount importance, an optimised plan is always better. It is the need for realistic, optimised plans that is driving many manufacturers away from classic materials requirements planning (MRP)-based planning solutions, which do not contemplate supply constraints and often generate an unrealistic supply plan.

E-supply chain

Traditionally, the supply chain was in focus only when the company was trying to cut costs. Now companies are realizing the potential of the net in collaborative activities as it has transformed the supply chain. It holds enormous promise for companies that are ready to move out of the physical boundaries of an organisation and manage virtually.

Among other activities, the effects of web are significant with regard to:

Design

Today, every company is operating under the spectre of product obsolescence. Innovation is the name of the game; either one innovates or the competitor will innovate and probably put others out of business in the bargain.

Internet enables communication between collaborators. Easy monitoring of resource inflow allows companies to plan their design and production schedules. Linking multiple players like suppliers, manufacturers and engineers will facilitate timely communication of real-time product information sharing.

Exchange

Traditionally, a supply chain involved many intermediaries leading to high lead times and large inventory stocks. Technology now allows buyers and sellers to transact directly with minimum intermediation. Emergence of online marketplaces and industry exchanges has benefited manufacturers and suppliers, especially in the business-to-business market. Organisations are either taking the supplier-centric approach or the buyer-centric approach to participation.

Whichever model, enabled industry exchanges can add value to a company's buying and selling process. Companies have a new dimension to their Just-In-Time management practices by sourcing for goods online, in real-time.

Fulfilment

While the virtual world offers opportunities to customise products and services, delivering them to the end-consumer has been a let-down. In fact, a recent study by Anderson Consulting revealed that even players (e-tailers) with off-line presence could deliver on schedule only 25% of the time. Though it largely depends on the product category, the delivery interface requires serious review and multiple arrangements with third party logistics service providers to ensure that the consumer is not lost during the 'last mile'.

Collaborative Networks

Most links in a supply chain are geographically diverse; therefore real-time conferencing was not always feasible. The net changed it all! Today, supply chains are 'e-nabled'. That means collaboration is possible across all levels, at all times. Business collaborations across the supply chain can result in enhanced value for the end-user.

Characters of an ideal network

1. An exchange of planning information across key partners
2. Accommodation by a consensus-planning process
3. Action as an integrated enterprise solution
4. Visibility and transparency with respect to information flow across partners
5. Responsiveness that allows the partners to react in real-time
6. Synchronisation and concurrency of the planning process

The collaborative network will require the players to follow a process that involves:

Defining the scope of collaboration: Before the process takes off, it is necessary to define roles of all the participants and other governance issues. Based on the role performed, the nature and the

extent of information to be shared are decided. Resource allocation and performance measurement issues are also defined.

Creating a shared business plan: Once roles are defined, the participants should come together and create a joint business plan. This will involve the product categories encompassing activities from product development to distribution.

Forecasting: One of the common causes of inventory pile-up and poor replenishment is inconsistent demand forecasting techniques. This occurs both inter and intra company. Initially, the organisations should ensure that all the functional teams internally have consistent forecasting methods and that all the participants would follow a common measure of forecast. This will result in uniformity of inventory planning and minimal inventory pile-up.

Making amends for exceptions in the forecast: While forecasting ensures that all players are working towards a singular goal, it is also necessary to identify the exceptions to the rule. For instance, consider the fickle fashion industry or the constantly innovating IT industry where trends can change overnight and products are rendered obsolete every day.

The Bullwhip Effect

The 'whiplash' or 'bullwhip' effect in supply chains refers to distortions in consumer demand information, as it moves upstream in the manufacturing process. The distorted information results in excessive inventory throughout the system, poor forecasts, capacity realisation problems, higher costs, falling customer service standards, longer cycle times, decreasing sales, revenues and the like. The causes are:

- **Isolated planning:** Often retailers, manufacturers and suppliers prepare sales estimates and forecasts in isolation. A slight surge in demand prompts retailers to place more than the usual quota of order with wholesalers, who in turn place huge orders with manufacturers. This inflates the actual demand and results in excessive inventory.
- **Sales incentive plans:** In their quest to qualify for a bonus, sales personnel who have not met their targets press upon indirect channel partners to place additional orders, thus amending sales forecasts at the last minute. This causes a mismatch between planned production and orders.

- **Pricing and promotion policies:** Frequent price markdowns and sales promotion activities disrupt demand predictions. Over- reacting to stock shortage caused by clearance sales could result in overstocking throughout the supply chain, creating excess costs.
- **Batching:** Companies usually place bulk orders (batching) at certain time points of the year to take advantage of freight concessions and administrative costs. It poses a problem for the manufacturer, who has to adjust his schedules to meet the demand, thus disrupting the smooth functioning of the supply chain.

Minimising the bullwhip effect requires real time information and collaboration among supply chain partners to keep track of product demand at each stage. Further, sales targets should be spaced out over shorter periods. Effectively designing promotions, scheduling transportation help to contain the effect. Probing for the reasons behind reductions or cancellations of orders also help to identify problem areas, thereby aiding in cracking the bullwhip effect.

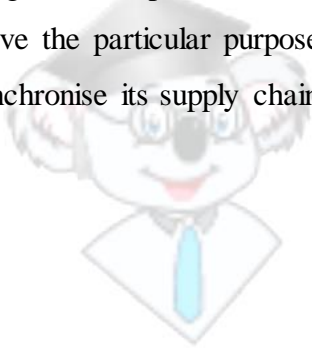
6. Enterprise Resource Planning (ERP)

More and more computers are used in operations in order to keep an inventory of the numerous materials required for the organisation. These are now known as MRP (Material Requirements Planning) systems. These systems dealt with the issue of 'When to order or manufacture' and 'How much to order and manufacture'. They used a combination of what are known as 'Push' and 'Pull' kind of inventory and production systems. The plant manufactured and 'pushed' items into the market. The 'pull' system depends on the actual demand to initiate the manufacturing as well as purchasing processes. The Master Production Schedule (MPS) articulates 'What we are going to make' in terms of end products. The 'Bill of Materials' (BOM) gives 'What it takes to make it' and the inventory record provides a list of 'What do we have'. All of these can be used to generate material requirements - 'What do we have to get'.

It was soon realised that managing the MPS was critical to make MRP work. The MPS is derived from the Sales and Operations Plan (SOP) of the organisation. In order to have an MPS that would be valid in the real world, the users had to consider the capacities of the existing equipment. This consideration of the capacities was done through the 'Capacity Requirements Planning' (CRP). This process led to the terminology of 'Closed Loop MRP'.

The systems were developed over time to monitor and plan all the resources in the functions of a manufacturing organisation - manufacturing, sales and marketing, finance and engineering. Thus was born the concept of Manufacturing Resources Planning (MRP II). MRP II, by virtue of its links between functions, enabled generation and use of a common set of numbers between them. It helped schedule the factory, the vendor deliveries, plan work force requirements, and plan capacity requirements for the future.

As the reach of the systems extended into newer areas within functions and to other areas within the enterprise, they began to be called '*Enterprise Resource Planning*' systems or sometimes '*Enterprise-wide Resource planning Systems*' (ERP). The evolution of this system has facilitated the tremendous increase in computing power over the years. ERP systems permit the enterprise-wide management of resources in real-time and help in the integration of sales forecasting, component procurement, inventory management, distribution, transportation, etc. ERP attempts to integrate all departments and functions across a company onto a single computer system that can serve the particular purposes and needs of the different departments ERP can help a company synchronise its supply chain management.



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