

# 15 Supply chain management and logistics

## What is the supply chain?

The supply chain is the flow of parts and raw materials from their point of origin to the factory gates, then through the factory as work-in-process, and finally out of the factory as finished goods to be delivered to the final customer.

A modern manufacturing operation might have hundreds of suppliers providing different parts and components, and each of these suppliers will in turn have their own suppliers providing simpler parts, raw materials, etc. This is the upstream end of the supply chain. Similarly, the downstream end of the chain might consist of distributors, multiple customers, etc, and will involve batches of goods being shipped at different times to different places.

## Supply chain management

During the whole process, from beginning to end, inventory (ie parts and goods) needs to be stored in warehouses and distribution centres and then transported as needed. All of this involves a huge amount of computerized information about the location of inventory, its expected arrival time at the next point, etc. This information has to be shared across many different companies and IT networks: suppliers, customers, third party logistics providers and the manufacturer itself. The management of this information is critical to the success of the business.

So, supply chain management (SCM) makes sure that the right items are in the right place at the right time and in the right quantities. There are of course wider strategic issues:

- How many suppliers should there be? And where?
- Where should the production facilities, distribution centres and warehouses be located?
- What distribution channels should be used?
- Which logistics companies should be used, both upstream and downstream?
- How can IT be used to integrate all the processes, make them more efficient, flag up potential bottlenecks, give clear signals of demand downstream, etc?
- How is cash flow and payment to all the parties involved in the supply chain going to be managed?

The aim of SCM is to collaborate with all the supply chain partners to improve the visibility and velocity of inventory.

## Logistics

The word 'logistics' refers to the practical issues surrounding transportation, warehousing and inventory management. Where there is an external focus it's more or less a synonym for SCM, but it can also have an internal focus, getting materials from site A to site B inside a company at different stages of the business process. The term 'logistics' is also used in smaller companies where 'supply chain management' seems too grand.

## The complexity of logistics

- \* It involves both inbound and outbound goods.
- \* It includes reverse logistics (ie, when goods are returned to the manufacturer, either because of customer returns, or overstocked inventory at the retailers, or outdated merchandise that can no longer sell).
- \* It involves unloading items from one means of transport and loading onto another. This can be at a distribution centre or a warehouse. There are three possibilities:



Hub and spoke	Consolidation	Deconsolidation
Materials are brought in to one central location and then sorted for delivery to a variety of destinations.	A variety of smaller shipments are combined into one larger shipment for economy of transport.	Large shipments are broken down into smaller lots for ease of delivery.

- \* It involves materials handling inside the factory: goods are placed on pallets and moved around on fork-lift trucks.
- \* It involves inventory management at every stage using IT. This includes the ability to track items in transit.
- \* It involves co-ordination with related business functions such as purchasing and plant management.
- \* It involves a choice of means of transport: air (using special cargo airlines); sea (with containers stacked up on top of each other); road (vans, or trucks with trailers); rail (using wagons / freight cars).
- \* It involves a decision whether or not to use a third-party logistics provider (3PL). These companies provide integrated pick-and-pack, warehousing and distribution. They can also act as forwarding agents to handle shipping arrangements.



## Exercises

### 15.1 Find a word in the text opposite that matches each definition below. The words appear in order.

- 1 at an earlier stage in a process \_\_\_\_\_
- 2 at a later stage in a process \_\_\_\_\_
- 3 groups of things that are made (or dealt with) together \_\_\_\_\_
- 4 large buildings for storing goods \_\_\_\_\_
- 5 (two words) buildings used for the storage of goods which will later be shipped to retail outlets \_\_\_\_\_
- 6 (four words) external firms that provide specialist services such as transportation and warehousing \_\_\_\_\_
- 7 (phrasal verb) draw attention to something \_\_\_\_\_
- 8 delays in one stage of a process that make the whole process take longer \_\_\_\_\_

### Now do the same for the words in 'The complexity of logistics' opposite.

- 9 coming towards or arriving at (eg a factory or airport) \_\_\_\_\_
- 10 (formal) goods for sale \_\_\_\_\_
- 11 taking goods off a vehicle \_\_\_\_\_
- 12 (three words) the design of the inner part of a wheel, with a central part and lines coming out of it \_\_\_\_\_
- 13 flat wooden structures used for moving or storing heavy goods \_\_\_\_\_
- 14 (two words) vehicles with special equipment at the front for lifting and moving heavy objects \_\_\_\_\_
- 15 follow the progress of \_\_\_\_\_
- 16 (phrasal verb) arranged into a neat pile \_\_\_\_\_
- 17 back sections of trucks that can be separated, and are used for carrying heavy objects \_\_\_\_\_
- 18 process of starting with a large quantity of goods, sorting them according to different destinations, and then re-packaging them with new shipping labels \_\_\_\_\_

### 15.2 Read the definitions and complete the examples with one of these words: cargo, freight.

- 1 goods carried by ship or aircraft [+ of]  
Example: a ship carrying a \_\_\_\_\_ of oil
- 2 goods carried by ship, train or aircraft; the system of moving these goods  
Example: \_\_\_\_\_ services

### 15.3 Make phrases by matching an item from each column.

- |                |          |
|----------------|----------|
| 1 supply       | provider |
| 2 finished     | customer |
| 3 final        | chain    |
| 4 logistics    | agent    |
| 5 distribution | goods    |
| 6 forwarding   | channel  |

### 15.4 Complete the text about logistics using the words in the box.

*balancing   ensuring   forecasting   handling  
 linking   negotiating   selecting   warehousing*

'Logistics' is a term that is used in many different ways. Using a broad definition it can include all of the following:

#### Customer service

1 \_\_\_\_\_ the right product is at the right place at the right time.

#### Demand <sup>2</sup> \_\_\_\_\_ and planning

Determining the quantity of goods that need to be ordered in the future.

#### Inventory management and materials <sup>3</sup> \_\_\_\_\_

Keeping the supply chain flowing, with no bottlenecks, by <sup>4</sup> \_\_\_\_\_ the quantity of items at different locations and different stages in the process.

#### Communication technology

<sup>5</sup> \_\_\_\_\_ the organization to its suppliers with IT, for example to provide information about demand patterns to facilitate Just-In-Time delivery.

#### Transportation

<sup>6</sup> \_\_\_\_\_ the best means of transportation (ie air, rail, ship, truck).

#### Purchasing

<sup>7</sup> \_\_\_\_\_ with suppliers about price, availability, quality, etc.

<sup>8</sup> \_\_\_\_\_

Locating and designing facilities that allow efficient storage and distribution.

All the above activities must be coordinated properly. Inevitably there will be trade-offs – less of one thing and more of something else – in order to achieve the best outcome overall.

### See page 147 for some discussion topics.



"I hope you kept the box it came in."