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.

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are returned to the manufacturer, either because of customer returns, or overstocked inventory at the retailers, or outdated merchandise that can no longer sell).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: Materials are brought in to one central location and then sorted for delivery to a variety of destinations.
  - Consolidation: A variety of smaller shipments are combined into one larger shipment for economy of transport.
  - Deconsolidation: Large shipments are broken down into smaller lots for ease of delivery.

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.
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
2 __________ and planning
Determining the quantity of goods that need to be ordered in the future.

Inventory management and materials
3 __________
Keeping the supply chain flowing, with no bottlenecks, by
4 __________ the quantity of items at different locations and different stages in the process.

Communication technology
5 __________ the organization to its suppliers with IT, for example to provide information about demand patterns to facilitate Just-In-Time delivery.

Transportation
6 __________ the best means of transportation (ie air, rail, ship, truck).

Purchasing
7 __________ with suppliers about price, availability, quality, etc.
8 __________
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.