Perencanaan jaringan logistik

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The role of distribution centres and warehouses

- There are a number of reasons why DCs and warehouses are required. These vary in importance depending on the nature of a company's business. In general, the main reasons are:
- •• To hold the inventory that is produced from long production runs. Long production runs reduce production costs by minimizing the time spent for machine set-up and changeover.
- To hold inventory to enable large seasonal demands to be catered for more economically.
- •• To hold inventory to help provide good customer service.
- •• To enable cost trade-offs with the transport system by allowing full vehicle loads to be used.
- •• To facilitate order assembly.

Cost relationships

- To plan an efficient logistics structure, it is necessary to be aware of the interaction between the different distribution costs, specifically as to how they vary with respect to the different site alternatives (number, size, type and location), and what the overall logistics cost will be. This is best done by comparative analysis of the major alternative configurations. Before this can be achieved, the detailed make-up of the individual distribution cost elements must be understood

Storage and warehousing costs

- The major cost breakdown for storage and warehousing is between building, building services,labour, equipment and management/supervision. The relationship of these costs will, of course, vary under different circumstances – industry, product type, volume throughput, regional location, age of building, handling system, etc.

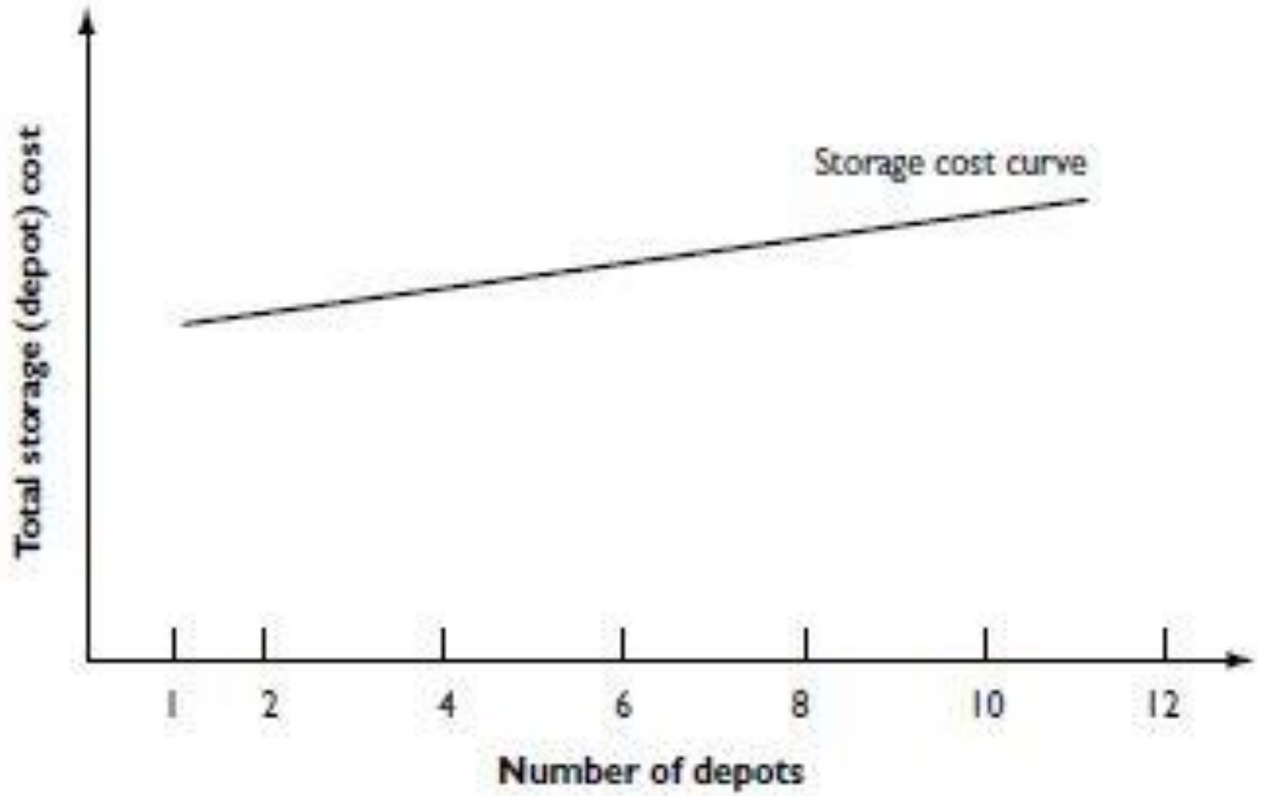

Figure 9.1 Relationship between number of depots (ie storage capacity) and total storage cost

Road transport costs

- The two most important categories of transport costs are primary (trunking/line-haul) and secondary (final) delivery. These are affected differently according to the number of DCs in a distribution network.

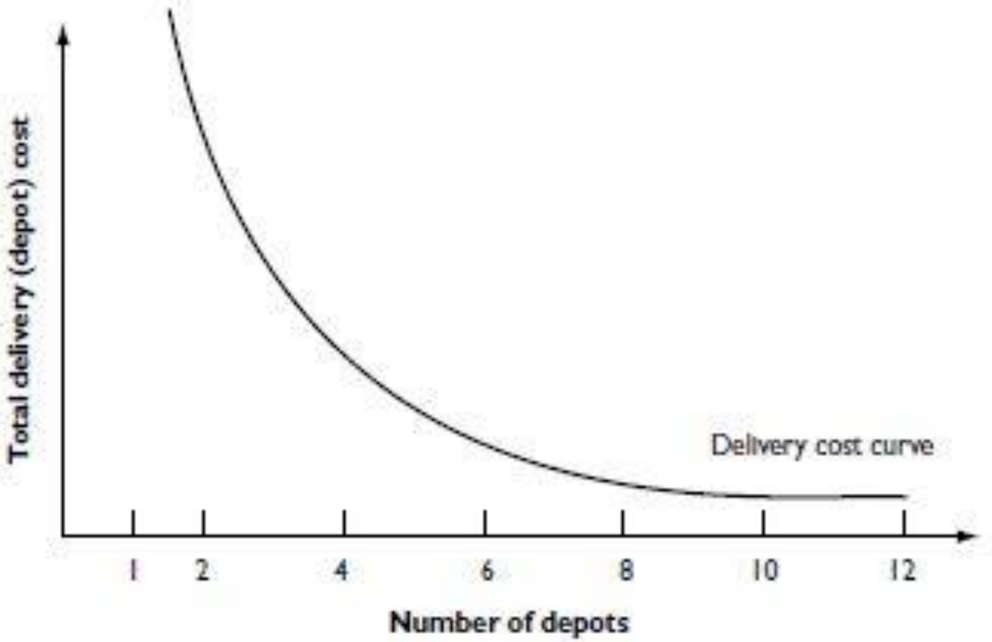

Figure 9.2 Relationship between the number of depots and total delivery costs

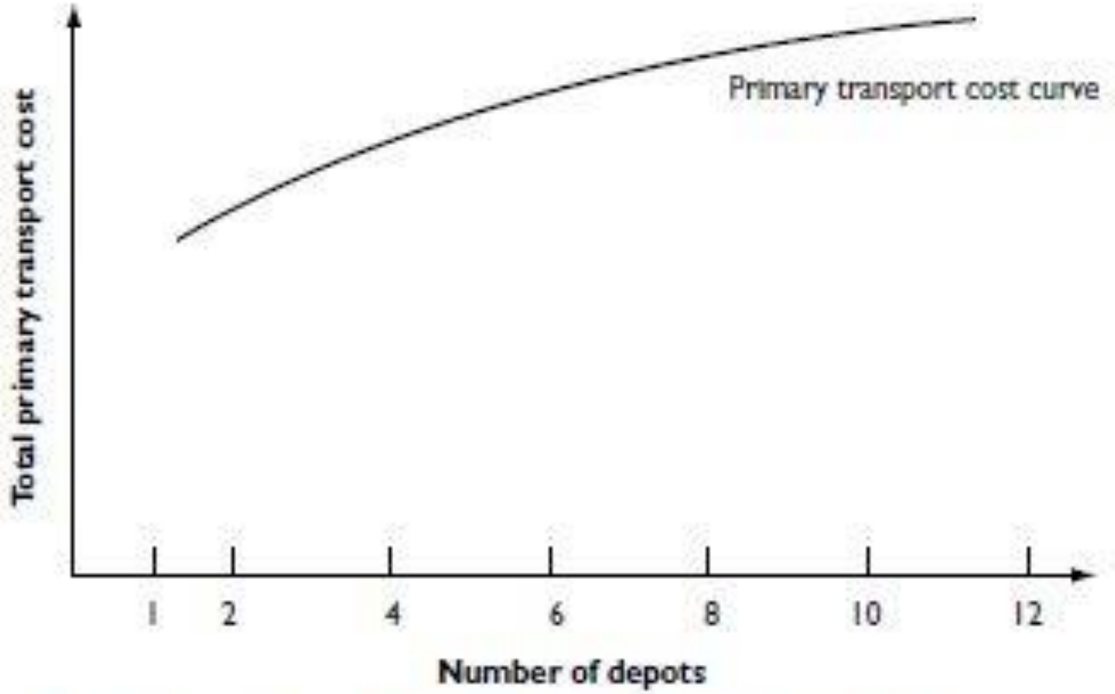

Figure 9.3 Primary transport costs in relation to the number of depots

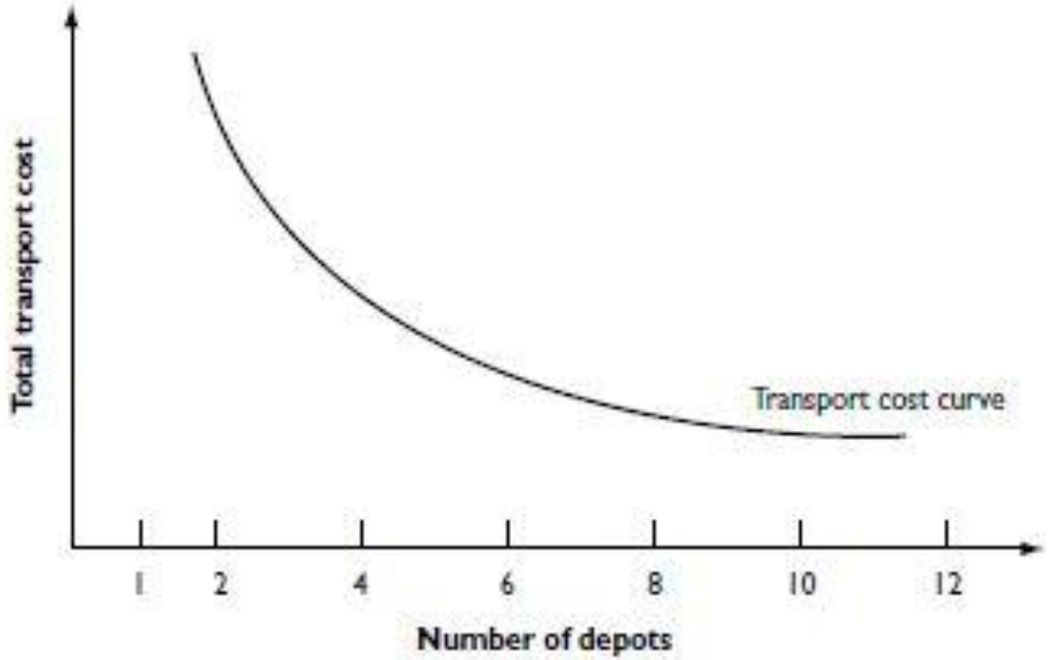

Figure 9.4 Combined transport costs (delivery and primary) in relation to the number of depots

Inventory holding costs

- Another important cost that needs to be included is the cost of holding inventory. The main elements of inventory holding are considered The key costs can be broken down into four main areas:

1. Capital cost – the cost of the physical stock. This is the financing charge, which is either the current cost of capital to a company or the opportunity cost of tying up capital that might otherwise be producing a return if invested elsewhere.

- 2. Service cost – that is, the cost of stock management and insurance.
- 3. Risk costs – which occur through pilferage, deterioration of stock, damage and stock obsolescence.
- 4. Storage costs – this cost is here considered separately as storage and warehousing costs (see earlier in this section).

Information system costs

- The final cost element for consideration is that of information system costs. These costs may represent a variety of information or communication requirements ranging from order processing to load assembly lists. They may be manual systems but are more likely to be computerized.

Total logistics costs

- Total logistics cost analysis allows this approach to be developed on a practical basis. The various costs of the different elements within the system can be built together. This provides a fair representation, not just of the total logistics cost, but also of the ways in which any change to the system will affect both the total system and the elements within the system.

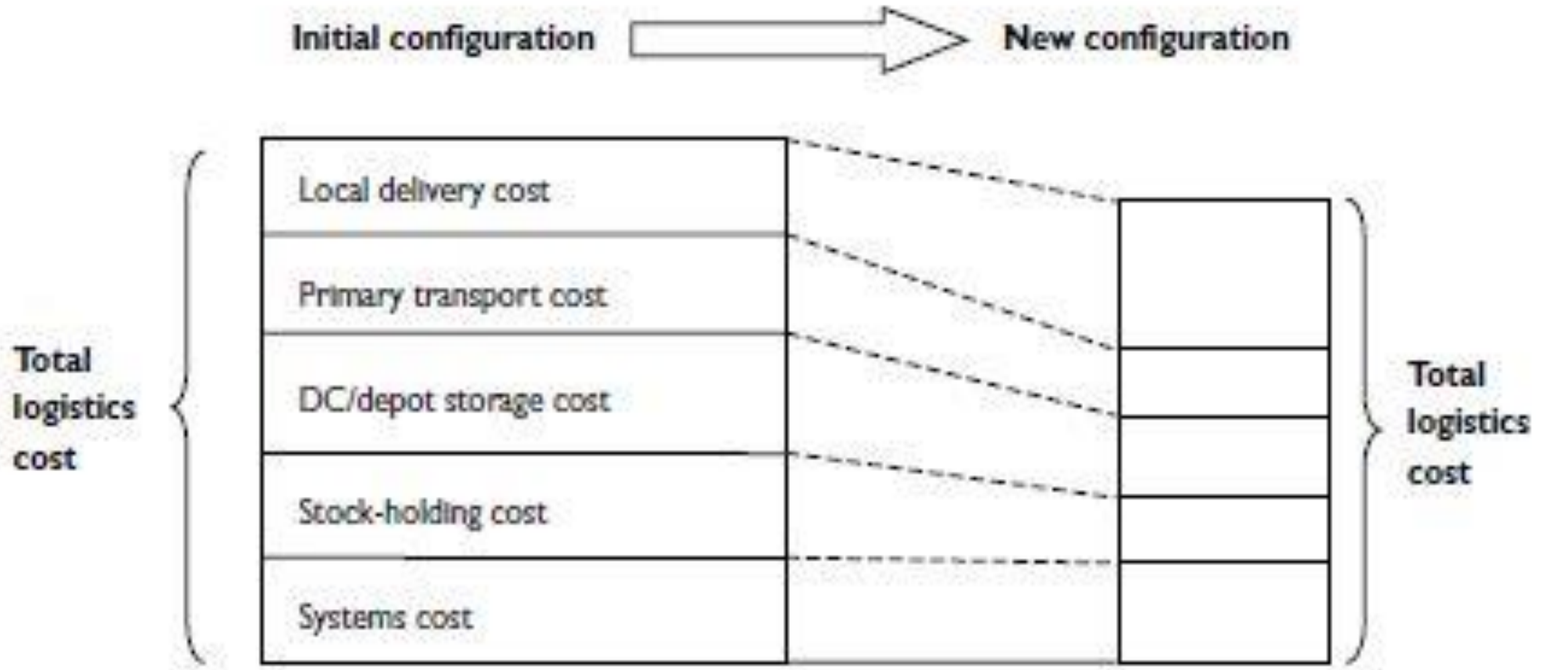

Figure 9.8 Trade-off analysis showing that a change in configuration can lead to a reduction in total logistics cost while some cost elements increase and others reduce

- The cost and service trade-offs within any logistics structure will, of course, vary from one company to another depending on the role the company plays within the supply chain as a whole. In the main, however, the following major costs and their associated trade-offs may need to be considered and assessed:

- Production costs. These will vary according to the type of production process or system used and the type of product manufactured. Make-to-stock or make-to-order will also be relevant. Factories may be ‘focused’ on one or two specific types of product or may make a large range of different products. Different distribution structures may be required to support different types of product. The effect on primary transport costs will be very relevant.
- Packaging costs. These are mainly concerned with the trade-off between the type of packaging and the handling and transport costs. The type of load unitization willalso be important
- Information systems costs. These cover a wide area from order receipt to management information systems. The type of DC network will affect many of these costs.

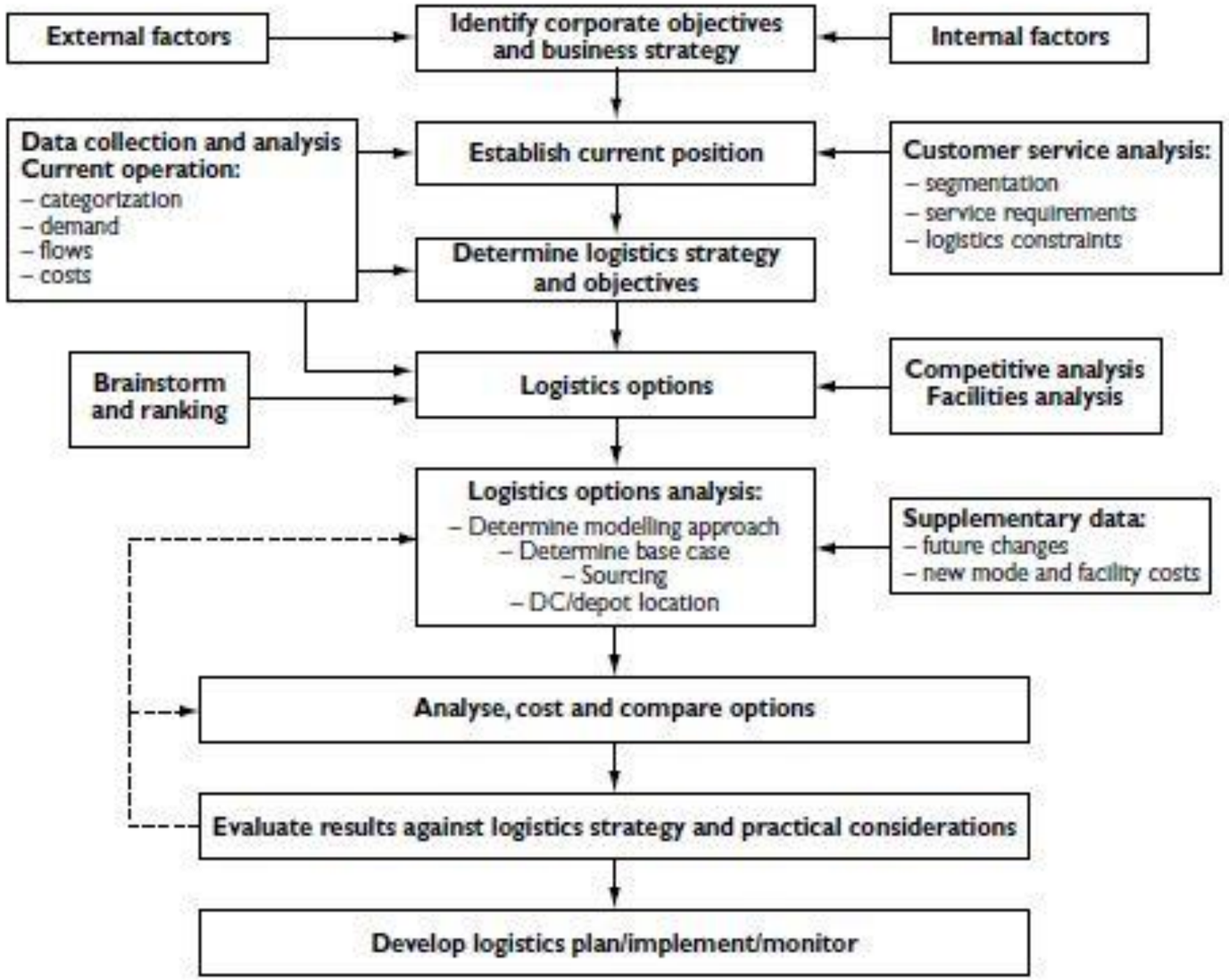

Figure 9.9 An approach to logistics and distribution strategy planning

Initial analysis and option definition

- External factors
- Any number of external factors may be relevant in a logistics-based study, and these will of course vary according to the industry, the company, the marketplace, etc. Some of the factors that may be relevant will include:
- •• transport mode availability;
- •• infrastructure changes (eg new roads, rail links, etc);
- •• regulatory changes (transport legislation, customs regulations, etc);
- •• information technology (EDI, EPOS, etc);
- •• technology changes (new vehicle design, unit load technology, etc);
- •• environmental impacts;
- •• industry trends.

Internal factors

- The importance of the many internal factors will certainly vary from industry to industry. It is generally possible to categorize these in two ways: first, qualitative or descriptive factors that relate directly to the operation under review; and second, quantitative facts and figures. Both qualitative and quantitative information is used to help ‘describe’ the business in an operational context. These factors need to be developed in great detail to represent the inputs into the modelling process for costs, product flows and customer service requirements.

REFLEKSI

Informasi penting hari ini

Manfaat penting dari informasi penting hari ini

Tindak lanjut yang dapat saudara lakukan

Thank you!

Any questions?