

You need to be aware, however, that the operative decisions have to be integrated within the broader corporate framework established by the strategic decisions. In consequence, you must always refer to the strategic approaches we discussed in Unit 4. For example, a multidomestic firm cannot have a standardised marketing strategy, and it would be inefficient for a global firm to have customised marketing messages. The relations between the various functional issues are summarised in Figure 5.1.

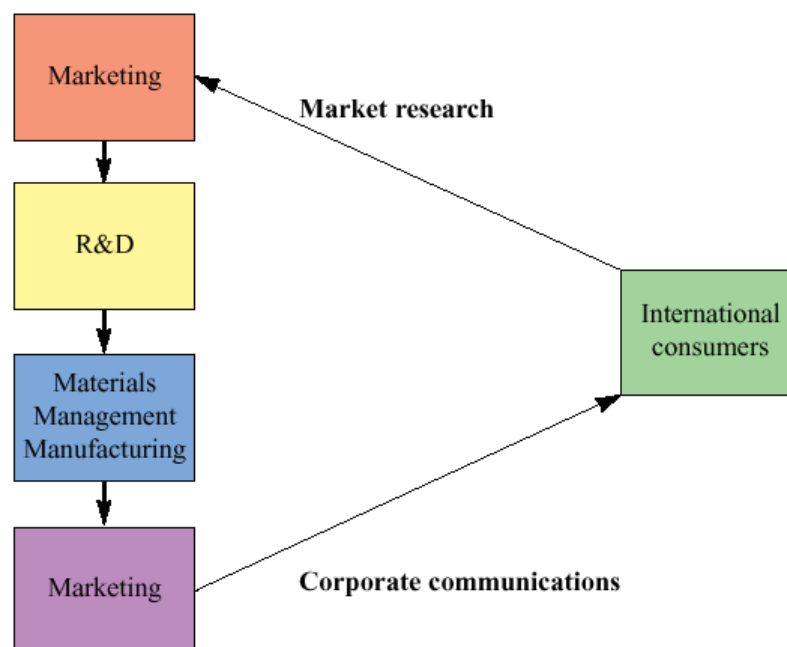


Figure 5.1: The interdependence of functions in international business

Key reading Hill, Chapters 16 and 17.

Objectives

By the end of this unit, you should be able to:

- understand the central problems in manufacturing
- discuss the problems in locating production facilities
- analyse make-or-buy decisions in international manufacturing
- identify the best way to organise international production systems and international supply chains
- understand the key tasks of marketing
- analyse the various dimensions of an international marketing strategy
- compare standardised and customised marketing approaches
- understand the relationship between R&D, manufacturing and marketing.

Key Issues

Materials and total quality management – international location of production facilities – make-or-buy decisions – global supply chain – international marketing strategy – international marketing mix instruments – standardised versus customised marketing – integrating strategy and functional problems

Read Hill, Chapter 16

☒ Manufacturing and Materials Management in International Business

Manufacturing and materials management are important functions of the firm's value chain. **Production** in general (as it refers to both products and services) and **manufacturing** in particular (as it refers to goods) can be defined as 'the activities involved in creating a product'. **Materials management** is 'the activity that controls the transmission of physical materials through the value chain, from procurement through production into distribution'. Both activities are highly interrelated and require integration and co-ordination.

Both functions have to fulfil two important strategic goals: lowering costs and simultaneously increasing product quality (see Hill, Figure 16.1, page 505). Both objectives are complementary, as higher quality leads to productivity increases which increase profits and reduce costs. Increased quality requires less reworking and lower scrap costs, whilst at the same time granting a higher sales potential. Since the middle of the 1980s, **total quality management (TQM)** has emerged as a new management approach dedicated to ensuring the delivery of the highest product quality whilst simultaneously lowering production costs.

In this unit, we are concerned with three particular issues of international manufacturing and materials management:

- international location of manufacturing activities
- outsourcing or in-house production of particular activities
- co-ordination of a globally dispersed supply chain.

The location question is highly important with regard to the firm's aims of increasing quality and lowering costs. On the one hand, certain countries have embedded skills and knowledge that might guarantee a superior quality, whilst other countries are low-cost production locations. Location decisions depend on three factors:

- **country factors**
- **technological factors**
- **product factors.**

We discussed **country factors** in Unit 1, which analysed cross-national differences in national cultures and national political economies. Both factors lead to different costs, which ultimately determine the choice of location. Other important factors to consider are trade barriers and FDI regulations (see Units 2 and 3 respectively) as well as changes in foreign exchange rate movements.

Technological factors concern the technology that actually performs the manufacturing activities. These are major parameters influencing location decisions. A major factor is the degree of fixed costs. **Fixed costs**, as we discussed in Unit 4 in the context of the experience curve, are not related to the firm's output. In contrast to variable costs, such as material costs, fixed costs occur whether the firm is producing or not. One of the most important factors influencing fixed costs are investment costs, such as the costs of building a factory for the production of semi-conductors. Whilst the actual variable costs for producing the individual semi-conductors are negligible, the fixed costs, which can easily exceed \$1 billion, determine the location decision. In terms of a strategic choice of concentration versus decentralisation of the manufacturing strategy, high fixed costs would imply concentration.

The experience curve proposes that there are economies of scale and learning effects, which reduce the unit cost curves. The question is whether an output is reached which makes further cost reductions negligible. According to economic theory, the concept of a **minimum efficiency scale** suggests that there is an output quantity at which the scale economies of most plants are exhausted (see Hill, Figure 16.2, page 508). At this level of production, further economies would have to be gained in administration, distribution or other functional areas. In terms of manufacturing strategy, the larger the minimum scale of efficiency, the greater is the likelihood of a high degree of centralisation of manufacturing locations.

The concept of economies of scale implies that the key to efficiency is a high volume production of standardised products. However, with modern trends leading more towards individualism and customisation, firms have reacted by **establishing flexible manufacturing systems**. These systems aim at reducing set-up time for complex equipment, increasing utilisation of individual machines through better scheduling and improving quality control at all stages of the manufacturing process. The general idea behind flexible manufacturing systems is to combine the advantages of mass production with the ability to customise production to adapt to particular consumer groups and respond to local needs. The key notion is the concept of **mass customisation**. The ability to endorse flexible manufacturing systems and combine the advantages of local responsiveness and global rationalisation decreases the need to diversify manufacturing and produce from different locations.

To sum up, the technological factors suggesting customisation are high fixed costs, a high minimum efficiency scale and the availability of flexible manufacturing systems. Decentralised manufacturing is a result of low fixed costs, low minimum efficiency scale and the absence of flexible manufacturing systems.

Product factors that influence the location decision refer to transportation costs (value to weight ratio) and whether the products satisfy universal or particular needs. For example, products with a high value to weight ratio (they are expensive but do not weigh very much) have low transportation costs (measured as a percentage of their overall costs). As a result there are pressures to manufacture in the right location. Products with a low weight ratio, on the other hand, (inexpensive but heavy) have to be produced locally, as transportation costs represent a high percentage of overall costs. Products that satisfy universal needs, such as industrial products, also do not require geographical proximity, which increases the pressures to produce in optimal locations to reduce costs.



ACTIVITY 1: QUESTION

We have discussed the various factors determining the location of manufacturing. They are also summarised in Hill, Table 16.1, page 511 and also on page 511. Use this information to discuss the manufacturing location decisions of the following firms:

1. Daimler Chrysler's new off-road vehicle
2. Norsk Hydro's detection of a new oil field
3. General Motor's decision to produce a new sports car designed for the German and Belgium markets
4. Merck's invention of a new drug

5. British Aerospace's plans to produce a new armoured vehicle for the British Army
6. Sony's innovative new CD player



ACTIVITY 1: ANSWER

Factors not mentioned in the text include natural resources and other geographical factors. How do these factors influence the location decision? A further point relates to the strategic potential of having a highly dispersed international production network (see the example of Ford in Hill, Map 16.1, page 512). The motivation behind establishing foreign production facilities cannot be solely reduced to cost considerations. Discuss (with reference to the transnational, global and multidomestic strategic approaches) what kind of strategic reasons could influence the location decision. Also, you should realise that foreign manufacturing sites can evolve over time from facilities with a better cost structure or with embedded knowledge to become centres of excellence in design or R&D or become the bridgehead for expansion into a particular geographical area. You should take these points into account when discussing the above examples.



Make-Or-Buy Decisions

The question of **sourcing decisions**, of whether to manufacture products within the firm (**make**) or outsource them from independent suppliers (**buy**), is highly important for firms that specialise in final products (**original equipment manufacturers, OEMs**). For example, should firms vertically integrate to produce their own components for a car or should they buy them from specialised firms? This make-or-buy question has become far more important since the globalisation of competition began to increase cost pressures on firms. One reaction was to outsource production in order to avoid having high fixed costs. The disadvantage of this strategy, however, is the need to integrate and co-ordinate the manufacturing process between the firm and its suppliers. The more outside component suppliers are involved in the manufacturing of a final product, the higher the need for co-ordinating the various companies.

Make (vertical integration)

The **advantages of make** relate to the following:

- lower costs
- facilitating specialised investments
- proprietary product technology protection
- improving scheduling of adjacent processes.