

5.6 Production planning (HL)

The local and global supply chain process

A supply chain refers to all the stages of production through which a product passes, from the extraction of raw materials to the delivery of finished products or services to customers. A supply chain may involve a number of different businesses. A simple supply chain for a wooden table might be as follows (**Figure 1**):

- 1. Trees are grown in a commercial forest, and then felled.
- 2. The trees are sold and shipped to a sawmill, which turns them into timber.
- 3. A carpenter buys the timber and manufactures a table.
- 4. A retailer sells the table to the consumer.

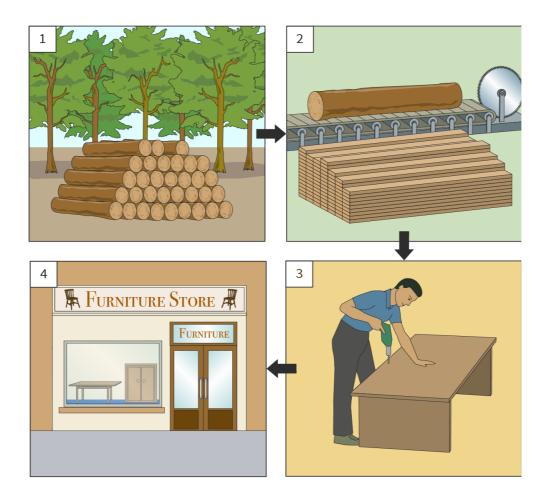


Figure 1. The supply chain for a wooden table.

In reality, supply chains are complex for many businesses. IKEA, for example, purchases products from more than 1800 suppliers in over 50 countries. The company

makes use of trading services to manage suppliers and negotiate favourable prices, whilst monitoring suppliers to ensure quality and sustainability targets are met.

In car manufacturing, a single car has about 30 000 parts – counting every item down to the smallest screw. Some of these parts are made inhouse; others are purchased from external suppliers. For example, Toyota's suppliers make seats, wheels, steering wheels, windscreens, headlights and meters. Many of these suppliers are located close to the Toyota factory so that they can meet the company's just-in-time requirements. When Tesla built their giga factories in Shanghai and Austin, Texas, many of their suppliers began locating within close proximity to meet Tesla's rapidly growing demand for resources.

Supply chain management is the process of working with all of a business's suppliers to ensure reliable and quality production and delivery of components and final goods. It is key to maximising efficiency and to ensuring multi-stakeholder value. Supply chain managers will consider many different factors when selecting suppliers, including:

- Impact on multiple stakeholders. It is important to consider the wellbeing of people and the planet in supply chain management. The choices a business makes about who, what, where and how to supply goods will impact workers and communities across the globe and the natural environment. Conscientious businesses will take their global—social and global—ecological responsibilities (Section 1.3.4 (/study/app/y12-business-management-a-hl-may-2024/sid-351-cid-174702/book/ethical-objectives-and-corpsocial-resp-csr-id-36520)) seriously.
- Cost. Because of purchasing economies of scale, supply costs may be reduced if large orders are placed. For this reason, some manufacturers prefer to use a small number of suppliers, with each one providing more than one component.
- **Reliability.** Reliability is about consistency and keeping promises. For manufacturers using just-in-time production, reliability will be a key factor when selecting a supplier. If a delivery is late or incorrect, the entire production line could be stopped.

- **Product quality.** Product quality involves meeting an agreed standard. Poor quality components from a supplier can lead to a fall in overall product quality and a loss of reputation. Purchasing from the lowest cost company may seem better for profitability, but weaker regulations may impact quality.
- Lead times. Lead time is how long it takes for a supplier to make a delivery. Lead times will vary depending on the industry and size of the order. An overseas supplier may take many weeks to fulfil an order, while lead times in a just-in-time manufacturing system may be measured in hours. In recent years, the supply chain has been prone to shocks such as the global COVID-19 pandemic, which caused many factories to shut down and resulted in longer lead times.

Theory of Knowledge

In order to better manage their stock (inventory), companies are using more and more data systems to monitor stock control levels and predict changes in demand.

• To what extent can the human sciences provide accurate predictions?

Local versus global procurement

Some companies are now choosing to procure their supplies locally rather than globally. Procurement refers to the processes required in order to acquire the necessary resources to conduct operations. When procuring supplies locally, a business seeks suppliers within the country borders in which it operates, rather than purchasing resources from another country. Some businesses are building a competitive advantage by promoting their locally sourced goods to attract consumers who are concerned either about the carbon footprint associated with goods transported over long distances, or with the ethical issues associated with exploited workers in other countries.

The demand for locally sourced products is growing, and many businesses are now recognising that a number of consumers consider sustainability and supply chain transparency important when purchasing products. Consumers like to know where their

goods come from, and they want to support ethical and sustainable supply chains with their spending. The benefits and drawbacks of using local and global supply chains are explained in **Table 1**.

Table 1. Advantages and disadvantages of local and global supply chains.

	Advantages	Disadvantages
Local supply chains	Greater control, less risk. It is easier to monitor logistics, quality management and ethical practices locally than globally. These issues are increasingly important to consumers, who may demand products with transparent and ethical supply chains. Lower transport costs. Increasing trade tariffs, rising fuel prices and taxes on carbon emissions make long distance transport more costly; shorter journeys will save money. Local-social and global-ecological benefits. Purchasing from nearby suppliers supports stronger local communities and networks. You learned about generative businesses in Section 1.5.6 (/study/app/y12-businessmanagement-a-hl-may-2024/sid-351-cid-174702/book/generativeregenerative-business-id-36546); these are easier to develop in a local setting.	Higher production costs. Local suppliers may not be able produce large quantities, reducing economies of . Thesestigher costs can lead to higher prices for consumers. Less choice. There may be fewer suitable suppliers offering the needed resources or products, especially for businesses in remote locations.

Global supply chains

Greater choice. Global markets have more potential suppliers with a wider variety of materials. Some materials, such as rare earth metals, may only be available in a limited number of places.

Lower costs of production. Global suppliers may offer resources or products at lower cost, because they pay workers less, have to comply with fewer regulations, or because they have technologies to produce more efficiently.

Greater risk.

Complex global supply chains may have greater risks due to exposure to multiple geopolitical tensions. Trade barriers, armed conflict, disrupted shipping routes, rising fuel prices, natural disasters and changing regulations are all issues.

Lack of transparency and control. It is more difficult to monitor logistics, quality management, and ethical labour and environmental practices globally than locally. These issues are increasingly important to consumers, who may avoid products with supply chains that are unethical or not transparent.

Concept

Sustainability and ethics

Sustainability is 'meeting the needs of the present without compromising the ability of future generations to meet their own needs' (United Nations, 1987). Business decisions should consider the impacts on people, planet and profit; the 'triple bottom line'.

- Sociocultural sustainability (people). Businesses provide for human needs
 and are interdependent with the communities they serve. They have a
 responsibility to support the wellbeing of all stakeholders through generative
 and distributive practices. This is particularly true in both local and global
 supply chains, where businesses have the opportunity to contribute positively
 to the wellbeing of workers elsewhere in the world by paying good wages,
 providing healthy work conditions and supporting employee development.
- Environmental sustainability (planet). Businesses should do more than
 minimise the negative impact of their activities. Instead, they should strive to
 be regenerative, working to improve the ecosystems on which humans
 depend. Businesses can do this through regenerative environmental practices
 that actively work to improve natural ecosystems both locally and globally in
 their supply chains.

Here you can see the intersection of sustainability and ethics. Ethics refers to moral principles that govern the behaviour of a person or groups. Ethical responsibilities in business come from the relationships and networks that are formed when business organisations are established. Businesses have a duty to engage positively in reciprocal relationships with their stakeholders and their natural environment.

You learned about businesses' responsibility to their local and global communities through the Doughnut Economics model in <u>Section 1.1.2 (/study/app/y12-business-management-a-hl-may-2024/sid-351-cid-174702/book/the-doughnut-economics-model-id-36500)</u>.

Case study

Vendease is an online marketplace operating in Nigeria. The company provides a digital service that allows restaurants and other businesses to buy straight from manufacturers or local farmers. The aim of the company is to digitise the process of placing orders for food produce. Vendease says it has helped more than 100 restaurants, hotels and other businesses to save on food ordering costs.

The Vendease app is a digital service that helps restaurants and food businesses place orders with suitable suppliers. The app enables filtering of suppliers based on quality and price, generating relevant suppliers to which orders can be assigned.

Vendease then helps to ensure 24-hour delivery of these orders, either through its own delivery network or via third parties. The app can also help businesses manage inventory, predict market demand and manage rising prices for food items.

Vendease states that it is focusing on three key areas:

- Promoting local sourcing of vegetables, fruit, dairy, meat, eggs and other harvested food. The company's aim is to guarantee quality whilst helping to support local farming communities.
- Investing financially into the local supply chain to help support vendors and farmers – and partnering with Grow Africa to engage better with markets. The company also states that it is helping small farmers to access markets by assisting with the transport of produce to businesses that place orders via the app.
- Improving sustainability by reducing food waste. Vendease states that, by helping companies to source suppliers via its app, they are helping rural farmers to sell their produce in the city and avoid wastage.

Questions

- 1. Define the term supply chain. [2 marks]
- 2. Explain **two** benefits to businesses from being able to order food resources via the Vendease app. [4 marks]
- 3. Analyse **one** ethical and **one** sustainability benefit of this method of ordering food resources. [4 marks]