Supply chain from manufacturing to shelf

Introduction

The Kellogg's Cornflake Company began in 1906 with the Kellogg brothers who originally ran a sanatorium in Michigan, USA. They experimented with different ways to cook cereals without losing the goodness. Their philosophy was 'improved diet leads to improved health'.

Between 1938 and the present day Kellogg's opened manufacturing plants in the UK, Canada, Australia, Latin America and Asia. Kellogg's is now the world's leading breakfast cereal manufacturer. Its products are manufactured in 19 countries and sold in more than 160 countries. It produces a wide range of cereal products, including the well-known brands of Kellogg's Corn Flakes, Rice Krispies, Special K, Fruit n' Fibre, as well as the Nutri-Grain cereal bars.

Kellogg's **business strategy** is clear and focused:

- to grow the cereal business – there are now 40 different cereals
- to expand the snack business – by diversifying into convenience foods
- to engage in specific growth opportunities.

By acting responsibly, businesses win respect and trust from communities, governments, customers and the public. This enables the business to grow. In the community, Kellogg's is known for its approach to Corporate Social Responsibility (CSR). For example, its programme to promote the benefits of breakfast clubs has provided over one million breakfasts to schoolchildren throughout the UK.

Businesses focus primarily on the creation of profit but increasingly understand that their social and environmental impacts are important. Kellogg's believes in acting responsibly in all sections of the **supply chain**. This is a better long-term business model for both the organisation and its customers. Amongst other activities, it aims to do this by reducing energy and emissions in manufacturing and distribution and improving packaging.

Kellogg's Global Code of Ethics demonstrates a commitment to act respectfully and ethically. *'Our mission is to drive sustainable growth through the power of our people and brands by better serving the needs of our consumers, customers and communities.'*

This case study shows how Kellogg's fulfils this mission in the later parts of the supply chain from manufacturing to shelf.

The supply chain

The industrial supply chain consists of three key sectors:

1. **Primary** (or extractive) **sector** - providing raw materials such as oil and coal or food stocks like wheat and corn. Some raw materials are sold immediately for consumption, such as coal to power stations. Others are used further up the supply chain to be made into finished goods.

operations

CURRICULUM TOPICS

- Supply chain
- Sectors of industry
- Lean production
- Sustainable business

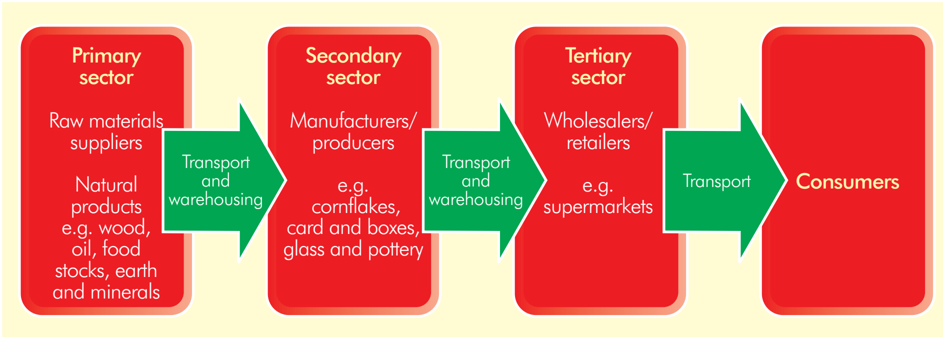
GLOSSARY

Business strategy: the overall plan a company has for itself.

Supply chain: the chain of processes linking the manufacture of products with physical distribution management so that goods are moved quickly and efficiently through various processes to meet consumer needs.

Primary sector: the first stage in producing goods concerned with growing or extracting raw materials e.g. oil drilling, mining, agriculture, fishing and forestry.

2. **Secondary** (or manufacturing) **sector** industries make, build and assemble products. Examples include car manufacturers or bakers who use primary products. For example, Kellogg's purchases rice for Rice Krispies and corn for Cornflakes.
3. **Tertiary sector** industries do not produce goods. They provide services such as in banking, retailing, leisure industries or transport.



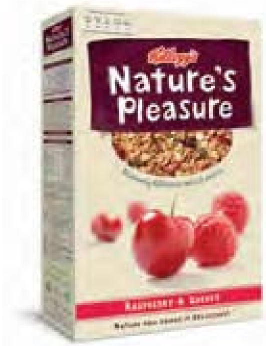
GLOSSARY

Secondary sector: manufacturing, assembly and construction.

Tertiary sector: service industries e.g. transport, banking, insurance or hairdressing.

Lean production: an approach to production that seeks to minimise waste and inefficiency.

Overheads: costs arising from the general running of a business e.g. rent, rates.



From start to finish of the supply chain a range of agencies or departments are involved. These include research, quality, purchasing, sales, and transport and distribution. As part of their business strategy, companies need to consider how best to acquire and distribute raw materials. Businesses such as Kellogg's recognise the importance of storing and transporting products effectively. Kellogg's seeks to organise transportation and storage of materials and finished products to minimise costs and environmental impact. Increasingly governments are working to encourage businesses and individuals to reduce their carbon footprint and the effects of global warming.

In the supply chain, there are a number of areas where waste can be identified. **Lean production** is an inventory system enabling the streamlining of processes and elimination of waste. Kellogg's regularly evaluates its production methods to ensure that they give the required outcomes and that waste is reduced. This aids competiveness and profitability by lowering **overheads** and unit costs.

In the past, businesses thought it was more effective if they carried out several parts of the supply chain, like manufacturing and transportation, themselves. To meet requirements and provide customer satisfaction, this meant deliveries taking place frequently and often without consideration of impacts on the environment. An urgent order might result in a half-empty vehicle making the delivery to a waiting customer. If this happened regularly it would be a waste of time and fuel. Consumers and governments now look for more environmentally-friendly methods of production and distribution systems. It is therefore more efficient and cost-effective for Kellogg's to specialise in the area in which it is expert – manufacturing. It does not have its own distribution fleet but uses partners for its transport needs.

The supply chain – the secondary sector

Kellogg's is a secondary sector business. It obtains its raw materials of wheat, corn, cocoa, rice and sugar from primary suppliers around the world. These materials help make over 40 different breakfast cereals and snacks to sell to customers through the tertiary sector. It is a large-scale manufacturer and stores sufficient stocks to meet customer orders. As part of its Research and Development (R&D) programmes, it develops recipes to extend its range of cereals and snacks.

Large-scale manufacturers like Kellogg's need to consider many different aspects of their operations:

- where to locate the business – this could be near to materials' suppliers. For example, power stations are often sited near to coal sources to reduce delivery costs. Frozen peas factories may be near farms to ensure the product is fresh. Kellogg's ingredients are grown in many countries. It is more important for its manufacturing sites to be near to distribution channels and customers so products can reach shelves quickly.
- size and scale– they need large factories with adequate space for equipment and production processes. They also need to accommodate the frequent delivery of incoming materials and outgoing finished goods.

- where and how materials and finished goods are to be stored until needed for sale. As part of Kellogg's manufacturing process it packages products ready for immediate distribution.
- where its customers are – Kellogg's does not sell its breakfast cereals directly to consumers. It uses **intermediaries** like wholesalers, supermarkets, high street stores and hotels. Transportation and storage occur between all stages of the supply chain.

Kellogg's largest UK production plant is at Trafford Park in Manchester. One of its storage depots was 15 miles away at Warrington. Kellogg's moved this storage to a new warehouse site in Trafford Park, only one mile away from its production base. This provides specialist energy efficient warehousing of stock 24 hours a day. To improve its distribution, Kellogg's collaborates with TDG, a **logistics** specialist. This reduces transport costs considerably and is energy-efficient. Kellogg's has reduced both its carbon footprint and costs as a result.

The Food and Drink Federation (FDF) is an umbrella organisation for food and drink manufacturers and has called on its members to improve their environmental performance by reducing:
1. levels of packaging to consumers
2. use of water during production
3. impact of transportation
4. waste to landfill
5. energy use during production.

Through the FDF, Kellogg's has signed an agreement with 21 major companies to improve water efficiency, reduce wastage and cut CO_2 emissions. Together these companies aim to save 140 million litres of water per day. This will reduce their water bills by £60 million each year. Kellogg's has also joined with the international company Kimberley Clark, which makes paper products like tissues, to reduce carbon emissions by sharing delivery services.

Kellogg's now has targets in these areas and where possible builds these aspects into **Service Level Agreements** with partner companies in the primary, secondary and tertiary sectors.

The supply chain – tertiary sector

The final stage in the industrial supply chain is the tertiary sector. The tertiary sector provides services. It does not manufacture goods. This sector involves:
- retailers like supermarkets that purchase manufactured goods from secondary sector businesses and sell them to the consumers
- service companies who may deal in, for example, finance, computer systems, warehousing or transportation.

Storing stock and transporting it are key activities that link all three parts of the supply chain. Kellogg's employs specialist transportation and storage companies to be responsible for all the logistics aspects of its business. One of Kellogg's partners, TDG, stores and transports pallets of Kellogg's cereals. This allows Kellogg's to concentrate on its specialist area of manufacturing cereals and other food products. Kellogg's also shares transportation with another manufacturer, Kimberley Clark. This has reduced distribution costs, helping keep Kellogg's products competitive. The system helps reduce the number of part-full or empty vehicles on the road. This saves time, road miles and provides additional benefits of reducing CO_2 emissions.

Kellogg's has major relationships in the tertiary sector. These include the major retail supermarkets such as Tesco and ASDA and some of the wholesale sector such as Makro. Kellogg's relies on retailers to help them promote a good relationship between the consumer and its products. To drive sales, Kellogg's is involved in initiatives that help add value for retailers. An example of this is the Shelf Ready Unit that Kellogg's developed with Tesco. This displays Kellogg's products easily and effectively. This means that the supermarket uses less staff time (and cost) in setting up a display. The display is attractive and easier for consumers to choose from, increasing **turnover** for Kellogg's and Tesco.

GLOSSARY

Intermediaries: someone who works between people or groups to help them agree on or carry out something important.

Logistics: the orderly movement and storage of goods throughout the supply chain i.e. from raw materials to finished goods.

Service level agreements: part of a service contract where the level of service is formally defined.

Turnover: the total value of all sales made in a given period of time. Sometimes referred to as sales revenue.

Kellogg's it's a SPECIAL feeling!

Managing the supply chain effectively

Having the right **marketing mix** ensures businesses have the right product, in the right place, at the right time. Kellogg's manufactures the right *products* based on research into consumer needs. It manages the distribution channels to *place* its products in stores. Its focus on cost-effective systems ensures its *prices* are competitive. It works with retailers to improve *promotion* of its products. Retailers want to hold limited stocks of products to reduce warehousing costs. Kellogg's uses a system called **just-in-time** to provide an efficient stock inventory system. Just-in-time means that just enough product is made to fulfil orders and limited stock is kept. Kellogg's needs to get the balance right at each section of the supply chain. Late deliveries or inability to deliver due to a lack of products might make retailers buy from competitors. Through its collaborations with TDG and by relocating some of its warehousing, Kellogg's now has a more efficient distribution system. Computerised stock holding systems ensure shelves are always full and orders are delivered on time. This helps Kellogg's to keep stocks to a minimum. It also helps customers like ASDA and Tesco to reduce their stocks too.

This illustrates the effectiveness of Kellogg's **supply chain management (SCM)**. This was achieved by a collaboration of industries within the supply chain. Each company works within their specialist area to provide products and services to consumers.

a) Distribution has improved through the collaboration of Kellogg's, Kimberley Clark and TDG. Storage, in itself, is investment without returns. Every day materials or products are on a shelf, they are costing money without earning any profit. Retailers do not want a warehouse that is unnecessarily full and neither do manufacturers. When deliveries are made, lorries need to be full to minimise unit costs of transportation. This collaboration has helped all of these aspects. Customers are guaranteed deliveries on time because stocks are monitored effectively. Deliveries are cost effective as lorry capacity is used effectively. Retailers like ASDA and Tesco benefit as they are kept stocked without storage costs. Therefore their advertising yields good returns, as customers are always able to buy Kellogg's products.

b) The lean production system streamlines processes and eliminates waste. Computerised warehousing means that products are manufactured efficiently, then transported straight from the warehouse to retail customers. This avoids delay to customers. TDG keeps the warehouse costs low through computerised heating and specialist transportation skills. The computerised stockholding shows immediately when shelves are empty. This then automatically generates orders to the manufacturing base at Trafford Park to replenish stocks. This minimises waste and the lower costs have increased Kellogg's profits. This also helps the company to keep prices competitive, which keep customers happy and loyal. The effect on the environment is good too as heating and fuel costs are minimised.

Conclusion

The three sections of the industrial supply chain need to interact to ensure goods or services reach consumers. The efficient delivery of the product to the consumer at the right price, in the right place and at the right time will result in good business for each link of the chain. This takes strategic planning and effective collaboration with all partners. Specialisation is more cost-effective for Kellogg's and partnering with other industry specialists reduces costs to the business, the customer and the environment. Kellogg's champions socially responsible operations. Through effective supply chain management, it benefits itself, the environment and other businesses.

Questions

1. Name the three sectors of the supply chain. On what occasions could certain sections of the primary sector operate as retailers?
2. Give three examples of how Kellogg's demonstrates good supply chain management. How can Kellogg's make improvements both for its business and for the environment?
3. Why is it important for Kellogg's to build good relationships with businesses in the tertiary sector?
4. Evaluate the benefits of large manufacturers like Kellogg's handing over the logistical side of their business to specialist companies like TDG.

GLOSSARY

Marketing mix: a series of variable factors such as the four Ps (product/price/place/promotion) used by an organisation to meet customer needs.

Just-in-time: production that produces goods to order. The business does not hold any significant level of stock, either of finished products or required supplies e.g. raw materials, components.

Supply chain management: creation of effective systems for the organisation of the distribution of items (components, end products, etc).

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