

A connection of product life cycle with logistics and distribution strategy

[Business](#), [Manufacturing](#)



Introduction

The product life cycle (PLC) of a product is a major determinant of the logistics and distribution strategy used. Product life cycle includes all the major activities used in the conception, production and sale of a product (Verma, 2012). The major activities in the product life cycle include product specification, product's detailed design, product manufacture and product sale. The design requirements of a product, type of activities used in realizing a complete product and the time required in realizing a complete product determine the strategies used in its logistics and distribution. In recent years, logistics and distribution strategy has become a core aspect for every company's success (Verma, 2012). This is mainly because of the rapidly changing customer trends, unpredictable demand and increased competition in markets. As an example, this scenario has necessitated for the implementation of product life cycle assessment at Unilever to help in ascertaining the environmental burdens and needs required for the entire life cycle of products (Verma, 2012). This assessment helps in assessing a product's demand, product durability and unique specifications of a product in its life cycle for the development of the most appropriate logistics and distribution strategy.

Impacts of product life cycle on logistics and distribution

The first thing in product life cycle that determines the logistics and distribution strategy used is product packaging and handling needs. According to Unilever's strategic distribution strategies, the primary packaging, secondary packaging as well as tertiary packaging needs of a

product determine the type of distribution strategy that will be used (Unilever Corporation, 2009). As an example, Unilever was forced to build a warehouse next to its manufacturing plant in Mexico to help in efficient handling of the products during loading. The warehouse has specialized tools, design and mechanisms of storing and handling frozen food products and ice creams. The internal design helps in stacking of up to six pallets of frozen foods, which mainly use metallic casing for the primary packaging. This helps in saving space and increasing handling efficiency (Unilever Corporation, 2009). Apart from this, the warehouse has up to seven docking areas for ships to increase the loading speed and reduce the turnaround time. The use of the right tools and temperatures in handling ice creams and frozen foods has enabled Unilever to increase quality of their products and extend their shelf life. The warehouse has also helped in increasing distribution speed, which is essential in the sale of frozen foods and ice creams (Unilever Corporation, 2009).

On the contrary, products with long shelf life at Unilever have their specialized packaging to help in transportation over long distances. Products such as laundry products, deodorants, toothpastes, soaps, shower gels, and shampoos are packaged in cartons before being packaged in containers to help in safe transportation over long distances (Unilever Corporation, 2009). Products packaged in cartons and containers for long distance distribution are normally transported using water, rail and tracks to reduce transportation costs and enable for bulk distribution. Such products do not

use agile transportation means but require specialized loading equipment like cranes and specialized loading vehicles.

Apart from the above, product perishability is another core aspect in products life cycle that determines the logistics and distribution strategy used. Products with short life spans need reliable and speedy distribution strategies to help in reaching consumers in time. The use of efficient distribution strategies helps in reducing wastes as well as increasing the efficiency of the distribution network (Deutsche Post DHL, 2012). As an example, Unilever Corporation designed the YETI project, which included the building of a new warehouse next to the manufacturing plant of ice creams and other refrigerated products in Mexico (Deutsche Post DHL, 2012). Building of a new warehouse, specifically designed for the storage of popsicles, ice creams and other frozen foods helped in improving storage efficiency, handling efficiency and reduction of wastes due to perishables. The warehouse was built to help in handling 60% of the increasing demand in popsicles, ice creams and other frozen products (Deutsche Post DHL, 2012). The warehouse also helped in handling demand for ice cream and other frozen foods during peak seasons favorably.

The YETI strategy was implemented in partnership with DHL Corporation, which is responsible for the distribution of the products to help in reduction of running costs. DHL Corporation was selected as the most preferred partner in distribution because of its agility in distribution and timely schedules, which is essential in the success of ice cream and refrigerated goods sales (Deutsche Post DHL, 2012). The use of DHL Company to handle

distribution and logistics also helps in reducing business running overheads and activities, hence giving Unilever an easy time in handling production and packaging activities. Apart from that, the partnership strategy helps in cutting initial costs of installing fridges and cold food handling facilities in distribution tracks and vehicles. The initial cost of installing refrigeration systems based on the R507 Gas and DLX radio frequency is very high as compared to hiring a secondary distribution assistant (Deutsche Post DHL, 2012).

The demand trends of a product is another major aspect of product life cycle that determines the logistics and distribution strategy used. Demand is a core aspect of any product's life cycle and determine the type of distribution strategy used (Verma, 2012). The construction of a manufacturing plant and warehouse in Mexico was a major strategy of reducing the distribution gap from their manufacturing plant to the end consumers. This strategy was mainly implemented to help in meeting the increased demand in ice cream, popsicles and other food products in the region, which require agile distribution strategies. Products with high demand and short life spans need efficient and well-managed distribution networks to help in minimizing wastes due to perishability and increase revenues (Verma, 2012). The warehouse built alongside the manufacturing plant helps in storage of large volumes of products to help in meeting demand of goods during peak periods. It also helps in storing products under the required conditions to help in extending product shelf life. Storing products under the required conditions also helps in minimizing wastes hence increasing profitability.

Products with high demands in the markets also require on-time distribution strategies to guard against product outage, which can lead to loss of customers (Verma, 2012). Apart from that, products with high demand in the markets require efficient product management in the warehouse to avoid delays and confusions during packaging. To deal with this issue, Unilever incorporated a DLX enabled warehouse management system with a radio frequency (Verma, 2012). This helps in efficient management of inventory and ensuring that loading takes the shortest time possible.

The availability of raw materials of a product is another core aspect in product life cycle and determines the logistics and distribution strategy used. Raw materials that need long distance transportation to the manufacturing plant require agile and efficient distribution strategies to help in meeting manufacturing speeds (Verma, 2012). The type of raw materials required in manufacturing products also determines the type of logistics and distribution strategy used. As an example, Unilever have been using palm tree logs in the making of palm oil. Such raw materials require heavy trucks and rail transportation to aid in fast delivery. Use of such transportation also helps in carrying the raw materials in bulk to help in cutting operating costs (Verma, 2012). On the other hand, products that use recyclable raw materials do not require extensive transportation of raw materials to the manufacturing plant but rather distribution strategies to the end consumers.

Apart from that, the availability of raw materials for a product also determine the quantity of available products for distribution to the end consumers. As such, the availability of raw materials can determine if a product will require

agile transportation services or slow distribution mechanisms (Verma, 2012). It also determines the rate at which the distribution tracks deliver the products to the wholesalers and retailers. The availability and nature of raw materials can also determine the location of a manufacturing plant. This is usually probable in cases where the cost of transporting the raw materials to the manufacturing plant are high as compared to starting a manufacturing plant close to the source of the raw materials (Verma, 2012). As such, raw materials have a high impact on the structure and nature of the distribution and logistics strategy used in distributing and marketing a product.

Conclusion

In conclusion, it is evident that product life cycle has a lot of impacts on the logistics and distribution strategy used for a product. Among the major aspects of products' life cycle that determine the logistics and distribution strategy used include product packaging and handling needs, availability of raw materials, demand trends of a product and product perishability (Verma, 2012). Assessing a product's life cycle before implementation of a logistics and distribution strategy helps in reducing operating costs, reducing wastes, meeting market demand, increasing sales and ensuring that there is efficiency in the product life cycle. Assessment of a product's life cycle can also help in determination of the major specialized packaging, transportation and storage needs of a product for increased shelf life. Selection of appropriate storage and transportation strategies helps in increasing efficiency in product handling and reducing waters, which is central for a company's success (Verma, 2012).