



Logística y Producción

Capítulo 10: Diseño de la Cadena de Suministro para la Logística



Alternativas

- 1.- Economías de Packaging y Transporte.

Ejemplo 1:

Swedish furniture retailer Ikea, with \$3.8 billion in sales, is the world's largest furniture retailer. Started in Sweden by Ingvar Kamprad, Ikea currently has 131 stores in 27 countries. It has grown so dramatically by "reinventing the furniture business". Traditionally, furniture sales were split between department stores and small, locally owned shops. Typically, customers would place an order, and delivery could take place up to two months after the order was placed.

Ikea changed that formula by displaying all of its 10,000 products in large warehouse-like spaces in out-of-town stores, and keeping all of these items in the warehouse. This was accomplished by designing products so that they can be packed compactly and efficiently in kits, which customers take from the stores and assemble at home. These kits are easy and cheap to transport, so products can be manufactured efficiently in a small number of factories, and then shipped relatively cheaply to stores all over the world. Since Ikea has so many stores, each of which is very large, the company is able to take advantage of vast economies of scale. This has enabled the firm to sell good-quality furniture at prices lower than that of its competitors.

Capítulo 10: Diseño para la Logística # 2



Alternativas

Ikea continues to work toward improved design and packaging to continue its dramatic growth-"recently the company figured out how to shave one-third off the width of bookcase packing boxes by making the back panels a separate, assembly piece".

Ejemplo 2:

The Hawaiian sugar industry switched over to bulk transportation after World War II, when costs began to increase. They estimate that the cost of transporting a bulk ton of sugar is about \$0.77 today, whereas the cost of transporting the same quantity of sugar in bags would be about \$20.00.

Capítulo 10: Diseño para la Logística # 3



Alternativas

- 2.- Procesos Concurrentes y en Paralelo.
 - Diseñar de modo de transformar pasos en serie a paralelos.

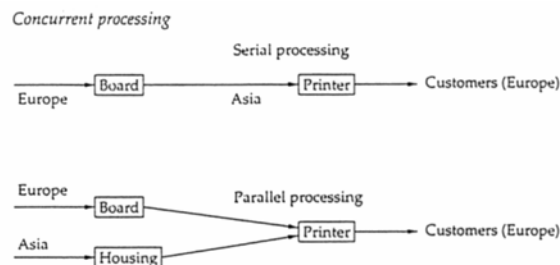
Ejemplo:

A European manufacturer produces network printers for the European market in alliance with a manufacturer in the Far East. The main printer PC board is designed and assembled in Europe. It is then shipped to Asia, where it is integrated with the main printer housing in a process that involves building the printer, including the motor, printhead, housing, and so forth, around the board. The finished product is then shipped to Europe. The manufacturer is concerned with the long production and transportation lead times, which make it essential to maintain a large safety stock in Europe. However, much of the long manufacturing lead time is due to the sequential manufacturing process.

Capítulo 10: Diseño para la Logística # 4

Alternativas

Redesigning the printer manufacturing process and product so that the board can be integrated with the rest of the printer at the end of the manufacturing process will decrease lead times by allowing parallel manufacturing in Europe and the Far East. In addition, moving final assembly to Europe can serve to further increase responsiveness and decrease lead times. The two manufacturing processes are diagrammed in the next Figure.



Alternativas

■ 3.- Postponer Diferenciación.

Ejemplo:

Benetton is a major supplier of knitwear, at one point (in 1982) the largest consumer of wool in the world, supplying hundreds of shops. The nature of the fashion industry is that consumer preferences change rapidly. However, because of the long manufacturing lead time store owners frequently had to place orders for wool sweaters up to seven months in advance before the sweaters would appear in their stores. The wool sweater manufacturing process typically consists of acquiring yarn, dyeing it, finishing it, manufacturing the garment parts, and then joining those parts into a completed sweater. Unfortunately, this left little flexibility to respond to the changing tastes of consumers.

To address this issue, Benetton revised the manufacturing process, postponing the dyeing of the garments until after the sweater was completely assembled. Thus, color choices could be delayed until after more forecasting and sales information was received. Thus, because of the postponement of the dyeing process, yarn purchasing and manufacturing plans could be based on aggregate forecasts for product families, rather than forecasts for specific sweater/color combinations.

Alternativas

This revised process made sweater manufacturing about 10 percent more expensive and required the purchasing of new equipment and the retraining of employees. However, Benetton was more than adequately compensated by improved forecasts, lower surplus inventories, and, in many cases, higher sales.

Alternativas

■ 4.- Producción Masiva a Medida.

- Flexibilidad añadida a la producción masiva (Mass Customization).

Ejemplo 1:

National Bicycle is a subsidiary of Matsushita that sells bicycles under the Panasonic and National brand names in Japan. Several years ago management found that sales were not at acceptable levels, primarily because the company was unable to predict and satisfy varying customer demand. In the year before beginning the mass customization efforts, 20 percent of bicycles from the previous year remained in inventory. Rather than market to a particular niche or try to improve forecasts, National became a mass customizer.

The company developed a highly flexible bicycle frame manufacturing facility, noting that painting, and installation and tuning components, were separate functions which could be performed by other "modules" in its manufacturing facility.



Alternativas

Next, they installed a sophisticated custom-order system called the Panasonic Order System at retailers. This system includes a unique machine that measures customer weight and size, and the appropriate dimensions of the frame, position of the seat, and extension of the bar stem. The customers can also select model type, color patterns, and various components. Information from the dealer is instantaneously transmitted to the factory, where a computer-aided design (CAD) system produces technical details in three minutes. The information is transmitted automatically to the appropriate modules, where manufacturing is completed. The bike is then delivered to consumers two weeks later.

Thus, by noting that the production process could be separated into independent production modules in a seamless and essentially costless manner, and by installing sophisticated information systems, National Bicycle was able to increase sales and customer satisfaction without significantly increasing manufacturing costs.



Alternativas

Ejemplo 2:

Dell Computer has become one of the dominant players in the PC industry-in 1998 it was the second largest manufacturer of PCs for business-by adopting a unique strategy based on mass customization. Dell never builds a PC for a customer until the customer's order has been placed. This allows the customer to specify unique requirements, and Dell builds the computer to these requirements. A growing majority of orders come in over the Internet. The order-taking system interfaces with Dell's own supply chain control system, which ensures that inventory is where it needs to be for the computer to be quickly manufactured. In addition, Dell stores very little inventory. Instead, Dell's suppliers have built warehouses close to Dell's facilities, and Dell orders parts on a just-in-time basis. By implementing these strategies, Dell has been able to provide customers with exactly what they want very quickly. In addition, inventory costs are low and Dell minimizes the danger of parts obsolescence in the rapidly changing computer industry. In this way, Dell has become one of the dominant players in the desktop PC market, and is well on its way to doing so in the laptop and server markets.



Alternativas

Dell has utilized many of the important concepts we have discussed to achieve its goals. The company is driven by advanced information systems which do everything from taking many of the orders (over the web) to managing inventory in the supply chain. Strategic partnerships have been established with many of Dell's suppliers. Dell is even establishing supplier integration partnerships with some of its key suppliers (e.g., 3Com, the network equipment supplier) to ensure that new computers and networking devices are compatible. Finally, Dell has utilized the concept of postponement, deferring final assembly of computers until orders have been received, to achieve mass customization.