

Delayed differentiation, postponement



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This report will discuss about the Postponement also know as Delayed Differentiation. How and why Postponement is used by organisation in production or manufacturing. Also includes, which technique has been applied and what are the benefits and problems could arise while using their application.

Postponement is widely used in the automotive, apparel, and consumer electronics industries. Many companies produce products that are candidates for postponement but are unlikely to undergo the implementation changes necessary to support it. This thesis highlights some of the leading companies who are pioneers of postponement and includes case studies of additional companies who have followed their lead. They have seen the tangible benefits of lower inventory costs, quicker response time, better forecasts, and more variety as well as the intangible benefits of better customer service and the coordination and integration of manufacturing, sales, and marketing functions.

What is Postponement or Delayed Differentiation?

A postponement strategy aims at delaying some supply chain activities until customer demand is revealed in order to maintain both low system wide cost and fast response.

Postponement was originally introduced in the marketing literature by Alderson in 1950. Fifteen years later, Bucklin extended and analysed it in the context of shifting risk. Since that time, little attention was paid to this concept until about a decade ago. Now postponement has become a marketing, manufacturing and logistics business concept and has been

applied through the whole supply chain. Became popular since 1990s (Lee, van Hoek and Yang). (Biao Yang and Neil Burns)

Figure 1: A Supply Chain

What are the types of Postponement?

There are four major types of Postponement as follows:-

3. 1 Purchasing postponement

Delay purchasing of some expensive and fragile materials.

Figure 2

3. 2 Manufacturing Postponement

Products in semi-finished forms and can be customized quickly in production facilities.

Figure 3

3. 3 Logistics Postponement

Products in semi-finished forms and can be customized quickly in production facilities close to customers.

Figure 4

3. 4 Time Postponement

Finished products are kept in central location and are distributed quickly to customers.

Figure 5

There are also other Postponement strategies such as Product development postponement, Price postponement, Postponement of passage of title, Demand postponement.

Why using a postponement or Delayed Differentiation?

Reduce inventory cost

Reduce transportation cost

Reduce risk of obsolescence

Reduce demand variability

Improve competitiveness by offering customized products quickly

Postponement is viewed as a vital element in any agile strategy and a powerful strategy to reduce and control demand variability. It enhances the ability of the company to compete on time while remaining cost competitive.

“ Postponement increases the company’s flexibility to respond to changes in the mix of demands from different market segments. The company can improve its responsiveness to orders or reduce its investment in inventory”.

By employing postponement and combining it with a holistic view, some companies have managed to improve the performance of the supply chain.

(Biao Yang and Neil Burns)

How a postponement works?

Requirements

High product variety

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Modular and standardized product design

Flexible manufacturing system

Real time information and communication

Fast response logistics

Strategic supplier relationship

Delaying operations associated with configuration and shipping, like labelling and packaging, is the most prominent application of postponement largely through logistics at the present time. Retailers are increasingly found to process some postponed operations (usually the final form). Even customers can configure the product by themselves when they have received it. (Biao Yang and Neil Burns)

Much research has been done on product and production process for delaying operations. For example, companies can (re-) design products and processes in such a way that companies can hold products in the semi-finished state and final assemblies are delayed until customers' orders are received. (Biao Yang and Neil Burns)

In addition, companies cannot ignore bottlenecks in the structure of the routing. It might be problematic to postpone some operations to be done on a bottleneck capacity. Also when utilisation of the production system is high, the value of postponement is low. (Biao Yang and Neil Burns)

CASE STUDY

6. 1 Company Overview

Imation is US based company, a world leader in the removable data storage device industry. Their commercial product line includes CDs, DVDs, floppy disks, cassettes, data cartridges, and USB flash devices. They also specialize in high-end tape storage devices which are used by banks and financial institutions to store data, financial records, and insurance information.

Imation serves all the major office supply retailers such as Office Depot, Office Maxx, Staples, and Best Buy as well as consumer product retailers like Wal-Mart and Target.

6. 2 Implementation of Postponement

Imation is a prime case study for postponement because it uses this strategy in multiple ways to maximize efficiency and flexibility throughout the supply chain. In 2001 data storage devices were becoming a commodity and Imation started looking for ways to differentiate within their supply chain. Additionally, the industry was plagued with long lead times, price erosion, and short product life cycles of three months or less. With an average total product lead time (from production to distribution) of 100 days, the company knew it needed to find ways to streamline its operations. Gillette's packaging strategy became the model from which Imation built its own postponement strategy. In addition to packaging, Imation realized that there was also value added in customizing products for some of its smaller customers. Therefore, they also looked into ways to postpone within the assembly process for both their high and low-end products.

Imation's supply chain is very decentralized with the main headquarters located in Oakdale, MN. Before postponement was implemented suppliers in Asia would manufacture the devices, a process that took anywhere from 30-45 days depending on the time of the month. The products were packaged at the point of manufacturing, placed in inventory, and shipped direct to customers. This process usually took between 40-50 days bringing total product lead time to 100 days. It was the realization of long product lead time coupled with short life cycles and price erosion that lead Imation to consider alternative methods for manufacturing and distributing their products.

Several changes were made to facilitate the transition to postponement. Imation began using suppliers in India instead of Asia despite the longer transit time to the US. " It was capacity along with cost and they [India] were also evolving the speed of their operations so that they could get the higher margins" [30]. This is a signal that shows how offshore manufacturers are beginning to compete for US manufacturing jobs by trying to offer faster turnaround – a source of competitive advantage for local producers.

Part of the difficulty in choosing and keeping suppliers also had to do with taking away the value added step from the suppliers and requiring them to change the product design. " They like to be involved in the value added part because they probably generate more value for themselves...The second issue is that you need to get them to redesign the product and the way it is going to get shipped to you in more of a bulk pack. Otherwise you end up putting a lot more added cost into your product that you end up throwing away".

The next step was to identify the postponement points for their wide variety of products. The solution was to have two distinct postponement points for the low-end commodity products. Imation saw that there was value added by offering the customization of disks and CDs for smaller customers such as private companies and universities who custom order media and data storage devices with a logo printed on them. Therefore, they created a secondary manufacturing plant in Oakdale where logo printing takes place.

The second postponement point occurs at the point of packaging. Products are shipped in bulk to a packaging centre in Kansas City, MO where different size packages are assembled-to-order. By having two postponement points Imation has been able to delay adding value at several steps until more information about customer demand is known. The result has been less obsolescence, lower inventory costs, and the creation of new domestic job opportunities.

Manufacturing for all of the high-end products (tape libraries and large data storage devices) takes place in the US because of the location to the customer and an unwillingness to wait for manufacturing offshore. Imation holds inventory of these high margin items but adds labels and initializes the tapes for a specific customer order. In this case it is the customer which drives the location of the business as well as the level of inventory.

Before implementing postponement, strategists at Imation built a model to help quantify the benefits and costs associated with changing their operations. Expenses for the company came in three areas: faster shipping methods, obsolescence, and increased inventory cost as a result of price

erosion. “ The model looks at all the components and says, ‘ based on this type of price erosion and life cycle, this is the amount of postponement you should do.’ The supply chain team and finance can plug those figures in and then we do a calculation and say ‘ ok, based on these criteria, this is the best solution for us.’ We are trying to minimize the total delivered cost instead of the total unit cost”. As a result, manufacturing cost increased and there was resistance from suppliers because Imation wanted to assume more responsibility for the value-added process, or customization. Getting management support was difficult because they would see cost increases in manufacturing. However, realizing that they minimized total delivered cost, Imation saw their inventory turns double and transportation costs offset by the ability to ship products to the US in bulk instead of in packaged form. In addition, market share for products that are not postponed is anywhere from 10-15 percent as opposed to 80-90 percent for those that are postponed.

In further developing their postponement strategy, Imation uses caution because some products do not require postponement activities in order to be profitable. It is a combination of market price and life cycle changes that dictate whether or not postponement is a viable option. Using the model is helpful to understand the extent to which Imation should postpone. “ It’s not a fixed number. We look at all these variables and our number will fluctuate. We are less likely to postpone items at the launch of a new product”.

Postponement assumes certain characteristics about demand and market factors. At product introduction some deficiencies of the product may not be visible until the maturity phase. Decisions on sourcing are not final until the

market reacts to competition and suppliers are strategically chosen based on customer willingness to wait.

Information highlights the benefits that come from postponing at various stages in a product's total lead time. The case emphasizes that increased costs in manufacturing are inevitable and the importance of minimizing total product cost instead of unit cost. It also points out the importance of timing when implementing postponement. Allowing a product to reach maturity may prove to be a better overall approach in order to determine whether demand characteristics even support such a move.

Conclusion

The most common strategic motivations for starting postponement were to improve service level and to reduce inventory holding cost as a result of an increase in product variety. Postponement strategies start with the goal of minimizing one metric and often result in improvements in other areas.

Figure 6. 1 shows a list of the primary drivers of postponement for each company and the primary resulting benefits. Another key factor in successful implementation is product modularity.

While postponement is a new concept for some companies it is now the standard for those who have seen its benefits. Postponement has proven itself as a valuable strategy for addressing the inevitable uncertainty of customer demand.