There are Different Types of Product Life Cycles

Exhibit 1  Types of PLC
Thus far we have talked about life cycles for entire product categories or product classes. However, life cycles exist at multiple levels of "product" (Exhibit 1). Indeed, marketing managers generally are most interested in the life cycles of specific brands. I like to view life cycles at three levels. Drawing on actual cigarette sales data, this slide illustrates the three that I consider most important from a managerial perspective. At the top is the product category life cycle, illustrated by the sales curve for the cigarette product category as a whole. At the next level, is the life cycle of a specific product form -- plain filter cigarettes -- within this larger product category. Finally, is the brand product life cycle illustrated, in this case, by a brand of cigarettes that is no longer marketed -- Philip Morris.[1]

Note that both the product category and product form life cycles follow the distinct "S- shaped" pattern from our discussion of the theoretical life cycle in earlier slides. In contrast, the branded life cycle exhibited by Philip Morris is much more erratic in shape. This is expected because the individual brand is the focus of management’s decisions. As marketing managers observe changes in the sales of their brands, particularly if sales are perceived to be declining, changes are made in one or more elements of the marketing mix. These changes are intended to offset, or reverse, sales declines. If successful, the declining sales trend will correct itself, at least for a period of time. However, sales again will eventually decline and changes will again be made to some aspect of the marketing program. It should be apparent that these ongoing decisions to change elements of marketing programs will cause the sales curves for individual brands to bounce around considerably. However, because the sales curves for many brands are summed to create the life cycle for the associated product form, and the curves for multiple product forms are summed to yield the life cycle for the entire product category, these latter two curves tend to be less erratic.

Exhibit 2  The life cycles of various brands of toothpaste illustrate quite well the erratic behavior of branded product life cycles.

[1] Exhibit 2 highlights the sales of
Toothpaste Product Life Cycles behavior of branded product life cycles. Exhibit 2 highlights the sales of specific brands of toothpaste between the years 1936 and 1982. Eighteen brands of toothpaste are illustrated. Note that most have very erratic life cycles that bounce around all over the place. A couple of brands (i.e. Colgate and Crest) possess the familiar "S- shaped" life cycle patterns. Other brands, however, possess curves with substantially greater degrees of variability. Note also the differing lengths of the life cycles. The dominant brands, including Colgate and Crest, have been around for long periods of time and possess strong sales patterns. In contrast, other brands such as Ammident, Chlorodent, Macleans, Peak, Dr. Lyons and Squibb have seen relatively short life cycles. Shorter life cycles often are associated with brands targeting smaller, more narrowly defined market segments or niches.

Product Life Cycle Stages Can Vary in Length

Exhibit 3 PLCs Vary in Length

Our examination of toothpaste life cycles illustrates, rather dramatically, the tremendous variability associated with branded product life cycles. They certainly vary in length and shape. Product category and product form life cycles also possess degrees of variability, depending on the type of product under consideration. Exhibit 3 contrasts the two extremes. At one extreme is the very short life cycle associated with the product fad. Fads move almost immediately into the growth stage of the PLC [assuming they catch on in popularity] but tend to die virtually overnight. Some fads possess significant residual markets that keep them around for a while, but even these products move fairly rapidly into and through decline.

Exhibit 4 Pet Rocks & Hula Hoops

Examples of typical fads are the yo-yo, the hula-hoop, and the pet rock. The Yo-yo provides an example of a fad with a significant residual market. Gary Dahl, a California advertising executive, came up with the idea for the Pet Rock over drinks with his buddies one night in April 1975 (Thumbnail Four). Based on a whim, Mr. Dahl informed his friends that he considered dogs, cats, birds, and fish all as "pains in the neck." They made a mess; they misbehaved; they cost too much money. He, on the other hand, had a pet rock, and it was an ideal pet - easy and cheap to maintain, and it had a great personality. Soon, the pet rock was born![2]

Refrigerators, as a product category, have exhibited a very long and relatively stable maturity phase due to the fact that they fill a substantial, on-going market need. This certainly accounts for the continued level of first time and replacement sales for this product. We are not likely to see refrigerators entering their decline until a major technological innovation emerges that fills the same market need more efficiently and less expensively.

Exhibit 5 Introduction Stages of Varying Length

Just as products like refrigerators can have extremely long maturity phases, some products may have very long introductory phases (Exhibit 5). In other words, it may take some products a substantial amount of time to catch on in the market before they enter their growth phases. These products have been referred to as "high learning products." These products often are complex to understand or use, may be extremely expensive, may not be easy to sample before committing to purchase, or may not be compatible with existing social values. The result is that the product’s rate of acceptance in the market is
slow. Video phones from our earlier discussion fit here. Thinking back to the new product development module, three additional products that illustrate extended introduction patterns are **instant coffee**, **microwave ovens**, and **automatic dishwashers**. Recall that all three were slow to diffuse because they lacked "**value compatibility**" i.e. they were not consistent with perceptions of the wife’s role in the family.

Introduction can also be very rapid. It may be impossible to distinguish between the introductory and growth phases for some "**low learning**" **products**. Such products take off almost immediately after they are introduced because they tend to possess high degrees of **relative advantage** and have few impediments to diffusion.

### Some Life Cycle Stages Can 'Repeat'

Some product categories apparently begin to transition into decline only to experience a substantial resurgence in sales leading to "re-growth." An excellent example is **nylon**. Additional new uses for nylon have been discovered by **Dupont** and other manufacturers since the product’s introduction, all of which have lead to substantial increases in sales and profits for Dupont.

Fashions also tend to exhibit the recycle pattern illustrated on **Exhibit 6**. The stages in a fashion's life cycle have been given somewhat different names, as shown in **Exhibit 7**. These stages are: the "**distinctiveness stage**," the "**emulation stage**," the "**mass fashion stage**," and the "**decline stage**." These stages still essentially are the introduction, growth, maturity and decline stages of the standard product life cycle. What is most different about the fashion life cycle is its recycle period. Fashions can be, and are, reintroduced. The ability of fashions to exhibit such cycle-recycle life cycles can be traced to their introduction and popularity with different generations.

### Summarizing Major Events During PLC Stages

**Exhibit 8** provides a summary of the major differences between the stages in the product life cycle with respect to sales, costs, profits, types of customers, and the nature of competition.

#### Introduction

To recap what occurs during the introductory stage:

- Sales generally are low and somewhat slow to take off. Customers are characterized as 'innovators.'
- Production costs tend to be high on a per unit basis because the firm has yet to experience any significant scale economies.
- Marketing costs required for creating customer awareness, interest, and trial and for introducing the product into distribution channels are high.
Profits, because of low sales and high unit costs, tend to be negative or very low.

Competitors tend to be few in number, indeed there may be only one major player in the marketplace -- the innovating firm.

**Growth**

Sales increase rapidly during the growth phase. This increase is due to: (1) consumers rapidly spreading positive word-of-mouth (WOM) about the product; (2) an increasing number of competitors enter the market with their own versions of the product; (3) and a "promotion effect" which is the result of individual firms employing, advertising and other forms of promotion to create market awareness, stimulate interest in the product, and encourage trial.

Cost are declining on a per unit basis because increased sales lead to longer production runs and, therefore, scale economies in production. Similarly firms may experience experience curve effects which help to lower unit variable costs.

Because sales are increasing and, at the same time, unit cost are declining, profits rise significantly and rapidly during this stage.

Customers are mainly early adopters and early majority. It is the early adopter, specifically, that is responsible for stimulating the WOM effect. During the latter part of growth, the first major segment of the mass market, called the early majority, enters the market. This category of consumers is somewhat more price sensitive and lower on the socio-economic spectrum. As a result, these consumers are somewhat more risk averse and, therefore, somewhat more hesitant to adopt the product.

Competition continues to grow throughout this stage. As competitors recognize profit potential in the market, they enter the market with their own versions of the product. As competition intensifies, strategies turn to those that will best aid in differentiating the brand from those of competitors. Attempts are made to differentiate and find sources of competitive advantage. In addition, firms identify ways in which the market can be segmented and may develop focused marketing strategies for individual segments.

**Maturity**

Sales continue to grow during the early part of maturity, but at a much slower rate than experienced during the growth phase. At some point, sales peak. This peak may last for extended periods of time. In fact, the maturity phase of the life cycle is the longest phase for most products. As a result, most products at any given point in time probably are at maturity. And, most decisions made by marketing managers will be decisions about managing the mature product.

Costs continue to rise during maturity because of market saturation and continually intensifying competition. When this slowing of sales is combined with the increasing costs associated with this stage, the result is that profits will have reached their highest level and must, from this point on, decline.

The only remaining customers to enter the market will be the late majority and the laggards. These customer groups are by far the most risk averse and most hesitant to adopt new products. These customers are quite price sensitive and, as a result, will not buy products until prices have seen significant declines. Many laggards, the last group to adopt, often do not do so until the product is virtually obsolete and in danger of being displaced by new
technologies.

- Competition is most intense during this stage. The intensity of competitive in-fighting drives the changes in costs and profitability.

Decline

- Sales continue to deteriorate through decline. And, unless major change in strategy or market conditions occur, sales are not likely to be revived. Costs, because competition is still intense, continue to rise. Large sums are still spent on promotion, particularly sales promotions aimed at providing customers with price concessions.
- Profits, as expected, continue to erode during this stage with little hope of recovery.
- Customers, again, are primarily laggards.
- There generally are a significant number of competitors still in the industry at the beginning of decline. However, as decline progresses, marginal competitors will flee the market. As a result, competitors remaining through decline tend to be the larger more entrenched competitors with significant market shares.

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