

# THE PRODUCT LIFE CYCLE CONCEPT: A CRITIQUE

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## **Abstract**

Business organizations are built upon and sustained by an orderly and consistent flow of new products. New products result from innovation and pass through a number of phases referred to as Product Life Cycle (PLC). The PLC concept is a generalized model of the sale trend for a product class or category over a period of time and recognizes that most products have a finite life. Marketing practitioners and academics have expressed varied opinions on the PLC concept. Is the PLC concept a useful instrument in marketing? The objective of this paper is to critically examine whether or not the PLC concept is a useful element of marketing theory. The paper adopts the historical research method and employs documentary data to ascertain the usefulness or otherwise of the PLC concept. The paper concludes that the PLC is not an academic figment of the imagination, but a normal and important business phenomenon- it is a hard reality, which is ignored at a great risk.

## **Introduction**

Dynamic business organizations are built upon and sustained by an orderly and consistent flow of new products. Product innovation enables the introduction of new products into the market place. Once a product is introduced, it passes through a number of stages known as the Product Life Cycle.

The Product Life Cycle (PLC) is a pattern-based approach that indicates the trends in product sales histories from their inception to their extinction. McDonald (1999) agrees with this viewpoint. According to him, a PLC plots the volume or value of sales of a product from its launch to its decline and withdrawal. It shows the trends in sales and profitability of a particular product over its life cycle. Advocates of the PLC concept assume that products follow a common sales pattern. "Knowing the common pattern", as Adeleye (1998, p. 143) stated, "can assist marketers to determine how a particular product can evolve."

The product life cycle represents recognition of the fact that most products will have a finite market life. This life span has clearly separate stages, just like the life span of an individual human being. The PLC concept draws an analogy between biological life cycles and the pattern of sales growth shown by successful products (Baker, 1999). Thus, in favorable conditions, species (and products) will proliferate, while in adverse circumstances, only the strongest and fittest will survive (Baker, 1992). The intuitive appeal of an analogy with the human life cycle is a crucial aspect of the PLC concept (Czinkota, Kotabe and Mercer, 1997).

Baker (1992:100) sees it as "a generalized model of the sale trend for a product class or category over a period of time, and of related changes in competitive behavior." In this respect, the PLC may be regarded as an important tool for planning at the strategic level. It must, however, be recognized that the PLC is not of itself deterministic and may be influenced significantly by environmental changes and/or marketing action.

Kotler (2000) opines that to say that a product has a life cycle is to assert that products have a limited life; product sales pass through distinct stages, each posing different challenges, opportunities and problems to the seller; profits rise and fall at different stages of the life cycle; and products require different marketing, financial, manufacturing, purchasing and human resource strategies in each stage of their life cycle- Marketers must, therefore, properly manage each phase of the PLC using the appropriate marketing mix to exploit the opportunities therein and derive maximum benefits.

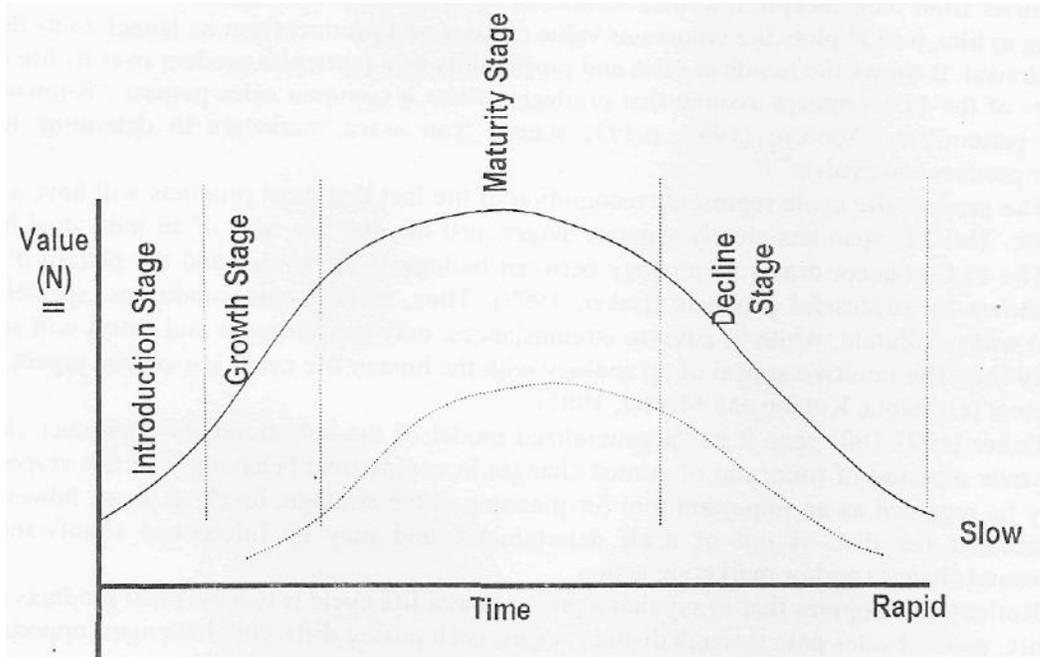
Marketing practitioners and academics have expressed varied opinions on the usefulness or otherwise of the PLC concept. Is the PLC concept then a useful instrument in marketing? Is it only used as a predictive tool? Does the PLC concept lead marketing managers to take erroneous marketing decisions? The objective of this paper is to critically examine these issues and determine whether or not the PLC concept is a useful element of marketing theory. The paper adopts the historical research method. This method is chosen because the study is a longitudinal survey which considers the trends of event in the history or developments of the PLC concept over a period of time. The study employs documentary data to ascertain whether or not the PLC concept is a useful tool in a dynamic business environment.

## The Product Life Cycle Phases

McDonald (1999) observes that all technical functions grow exponentially until they come up against some natural limiting factor, which causes growth to slow down, and, eventually, to decline as one technology is replaced by another. There is a universal agreement that the same phenomenon applies to products, which gives rise to the concept of the PLC.

The concept of the product life cycle, according to Czinkota, Kotabe & Mercer (1997), suggests that any good or service moves through identifiable stages, each of which is related to the passage of time and has different characteristics. It is an attempt to recognize different stages in the life history of a product.

Schematically, the PLC may be portrayed as a bell-shaped curve that is divided into four basic stages in the life of a product: Introduction, Growth, Maturity and Decline. These stages are illustrated in Figure 1.0:



**Fig. 1.0; The Product Life Cycle.**

**Source:** *Elements of Marketing*; Second Edition (London: A. R. Morden. 1991); p. 241.

The actual shape of the curve and the length or duration of the four constituent stages, according to Modem (1991), will vary depending ON the product or brand. They will depend on the interaction of many variables including:

- The emergence, growth or disappearance of markets and segments.
  - Trends in available buyer spending capacity, real disposable income, etc.
  - Technological developments, which may lengthen or shorten the life cycle stages.
  - Changes in the taste and preferences of consumers or buyers.
- (e) The effect of manufacturing or distribution cost changes on the price to the consumer; and relative movements in the price of competing or substitute products.

The four distinct phases of the PLC allow for making useful generalizations about the main characteristics of each phase, of the basic strategic alternatives available and of the most appropriate marketing mix for implementation. We shall examine each of these four phases for proper comprehension.

### The Introduction Stage

The introduction stage takes place when the new product is first made available for general purchase in the market place. It is marked by a very slow rise in sales mainly because its market has not yet accepted the product. Baker (1999) agrees that there is a strong relationship between how much better the new product is, and how easy it is for users to accept this and the speed at which it will be taken up. Progress is generally slow at this stage. Kotler (2000) identifies other factors responsible for slow sales growth. These are delays in

expansion of production capacity, technical problems, delays in obtaining adequate distribution through retail outlets, customer reluctance to change established behavior, product complexity and fewer buyers.

This stage is characterized by high manufacturing and marketing costs and is a drain on cash (Osuagwu & Eniola, 1997). Profits are negative or low because of the low sales and heavy distribution and promotion expenses. There are few competitors. Prices tend to be high. The firms direct their selling efforts to those buyers who are willing or prepared to buy, usually higher income groups. This stage will be dominated by the need to establish the product in the market by building buyer and distributor awareness of the product and its benefits. Management will have to overcome trade and consumer *resistance* towards accepting new products after establishing the initial awareness (Baker, 1992). Management has to ensure that adequate stocks of product are available for sale, and must quickly overcome initial technical shortcomings.

Many new products are stillborn or suffer from basic deformities, which severely limit their chances of survival. 'Infant mortality', as Baker (1992, p.101) puts it, "is far greater than it should be." The success or failure of a new product depends on a number of technical factors, such as quality, performance, infrastructures, machines, expertise and technology; and the prospective buyer's response to them. To improve the likelihood of survival, business organizations need to concentrate more attention on the behavioral response of potential users and concentrate their selling efforts on those with the greatest receptivity to innovation. This requires the use of undifferentiated strategy emphasizing the price and promotion variables as a means to stimulate interest in and early sales of the product (Baker, 1992). This is because they are the two most visible elements to consumers at this stage. Kelly (1972) supports high promotion investments in this stages and added elaborate feedback programs and adjustments in the marketing strategy.

A well-managed product or brand, which successfully passes through this stage, enters the growth stage.

### **The Growth Stage**

The growth stage is marked by substantial rise in sales as consumers accept and demand the product if it satisfies the market. As people take up the new product, they will talk about it and make it more visible to non-users and reduce the perceived risk seen in any innovation. Consequently, as Baker (1999) and Czinkota, Kotabe and Mercer (1997) observe, a contagion or bandwagon effect will be initiated as consumers seek to obtain supplies of the new product. Thus, producers, recognizing the trend, will switch over to making the new product in place of the old which results in exponential growth.

New competitors will enter the market as they are attracted by the opportunities for large-scale production and profit. They will introduce new product features and this will expand the market. The increase in the number of competitors will lead to an increase in the number of distribution outlets.

The marketer's task at this stage is to build market share (Adeleye, 1998) and sustain sales growth. The new product may begin to enjoy rapid sales growth if it was successfully established. This stage should be managed so that a full demand base is built in the market. The firm should selectively build customer demand at the expense of existing or substitute product types marketed by competitors.

The growth stage is likely to see the emergence of competitive pressures and the beginnings of downward pressure on high introductory prices if these have been used. The firm, in this stage, can capture a dominant position by spending money on product improvement, promotion and distribution. It can forgo maximum current profit in the hope of making even greater profits in the maturity stage.

### **The Maturity Stage**

The market is known and has grown at this stage. The number of competitors has stabilized and the market becomes highly segmented. The main channels of distribution become established and promotional distinctions must be designed for each segment. Baker (1992) believes that this stage is usually the longest single phase of the life cycle and normally will be proportionate to the length of the gestation/introduction phase.

The product faces a keenest competition at (his stage. Competition in the market place is mainly concerned with the market share. Thus, critical marketing activities need to be managed to maintain product distribution, customer access to the product; and customer loyalty to the brand or product which will increase the rate of repurchase.

Markets are finite at this stage and sales will level off as the market becomes saturated. Baker (1999) observes that following the pangs of birth and introduction and the frenetic competitive struggle when demand took off, producers relax and perhaps become complacent when they are the established leaders in mature and profitable markets. Levitt characterizes this phase as self-deceiving. Though the firm may try its best to prolong the mature phase of the PLC, decline is ultimately inevitable.

## **The Decline Stage**

At the decline stage, sales and profitability continue to decline consistently and, perhaps, irreversibly. The decline might be slow or rapid. Product decline may be due to technical advances or innovation, changes in customer or trade attitudes toward the product, over-familiarity with the product, the emergence of better products in the market, changes in fashion, shifts in consumer tastes, or increased domestic and foreign competition.

Consumers are motivated by self-interest rather than loyalty at this stage. They will be quite willing to switch their allegiance if another new product comes along which offers advantages not present in the existing offering. Recognition of this represents a market opportunity for other innovators and entrepreneurs, which they will seek to exploit. They will introduce another new PLC; while bringing to an end that of the product to be displaced.

Some firms withdraw from the market as sales and profits decline and invest their resources in more profitable areas. Those remaining may reduce the number of products they offer. They may withdraw from smaller segments and weaker trade channels, cut their promotional budgets and reduce their prices further. Kotler (2000, p.313) emphasizes, "unless strong retention reasons exist, carrying a weak product is very costly to the firm."

The PLC is a normal and important business phenomenon. In today's rapidly changing environment, how useful is the PLC concept? We shall now examine the usefulness or otherwise of the PLC concept.

## **A Critique of the Plc Concept**

The product life cycle concept is a very important element of the marketing theory. Czinkota, Kotabe and Mercer (1997) assert that the intuitive appeal of an analogy with the human life cycle is a crucial aspect of the PLC. Critics, however, allege that PLCs lack what living organisms have. Many highly respected practitioners and academics have rejected the PLC as a useful weapon in the marketer's armory. Foremost among the critics are Dhalla and Yuspeh (1976) in Baker (1992). Their article found considerable support for their contention that the PLC concept is without empirical support and has led managers to take incorrect decisions particularly concerning products in the mature phase of the cycle.

Baker (1992, p.100) strongly refutes this allegation. He contends that to claim that there is no empirical support for the concept is true. Czinkota, Kotabe & Mercer (1997) affirm that researchers tested the concept against a selected 140 categories of non-durable consumer products and concluded that the PLC model is valid in many common market situations. It must be noted that the fact that managers have made wrong decisions when seeking to apply the concept is due to their misinterpretation of it rather than an intrinsic deficiency in the concept itself. Such misinterpretation invariably arises from the mistaken belief that the PLC is a precise forecasting tool when in reality it is a 'generalized model of the sale trend for a product class or category over a period of time, and of related changes in competitive behavior' (Buzzel in Baker, 1992, p.-100). As such, the PLC may be regarded as an important tool for planning at the strategic level always recognizing that it is not of itself deterministic and may be influenced significantly by environmental changes and/or marketing action.

Critics of the PLC argue that in real life, the growth curve seldom assumes the smooth symmetry depicted in the textbooks, nor do its parameters conform to the mathematical formulae that summarizes the diffusion processes in the physical and natural sciences (Baker, 1992). Czinkota, Kotabe and Mercer (1997) also submit that data in real life are never as smooth as the PLC curve would have us believe. Products experience seasonally, temporary lulls, sudden spurts and sharp drop-offs, particularly when performance is measured on week charts. A temporary downturn, for instance, may be mistaken for the onset of decline and resources withdrawn (and the brand even milked), leading to an inevitable decline of the brand. This makes it very difficult for management to decide exactly where the product is in its life cycle.

The PLC offers a useful model to keep in the back of your mind when making your plans, whether you are marketing a good or service, or are in the nonprofit sector. Given (the number of intervening variables, which can interfere with the process, it would be very surprising if sales did expand smoothly and the fact that they don't should not be seen as invalidating the broad underlying trend (Baker, 1992). The growth process can be slowed down by supply and/or distribution difficulties, seasonally, competitive reaction, a downturn in the economic climate, etc., while cheap money, tax charges, new supplies, etc., could all serve to speed it up. The technical complexity of the product, the size and nature of the investment necessary to produce supplies of it and also the existence of or not of patent protection are important factors that affect the growth curve of the PLC.

In assessing the slope of the growth curve, it is important to note that "consumption is a function of availability' (Baker, 1992: 104). The physical availability of an object is the ultimate constraint on its

consumption. If a producer, for example, can restrict supply, he will be able to exercise much greater control over the marketing mix and will ensure a shallow growth curve quite different from the classical PLC'. On the other hand, many fad and fashion goods exhibit almost vertical sales curves due to sufficient supply to meet all needs almost instantaneously. The very nature of the fashion goods indicates that it is unlikely to be re-purchased with the result that sales will stop once the market is saturated.

Critics also allege that the PLC can lead to erroneous marketing decisions, such as premature withdrawal from markets. If management is mistakenly convinced that the product life cycle is declining and acts as though it is, a self-fulfilling prophecy can occur.

One of the managerial uses of the PLC is as a control device to monitor the onset of maturity, so that action can be taken to avoid decay (Baker, 1992). Such action may consist of product improvement and/or increased promotional action to extend the mature phase, or rejuvenation strategy based on either product or market development, which may initiate a new growth phase. McDonald (1999) subscribes to this view. He sees the PLC concept, from a management point of view, as useful in that it focuses our attention on the likely future sales pattern if we take no corrective action. There are several courses of action open to us in our attempts to maintain (the profitable sales of a product over its life cycle.

Indeed, if your product is in the introduction phase, or decline, you must remember that in these phases, you may be making many life and death decisions. Between these two extremes, it is useful to have that vision of mortality in front of you, if for no other reason than remind you that, if you take no action, product death will come that much earlier.

Disagreements about the value of the PLC' concept centre on its practical use; the predictive rather than descriptive role of the technique is open to question. Although in the right context, the PLC may be a useful theoretical device, there are frequently significant problems in trying to put it into practice.

Koller (2000) outlines the practical and descriptive role of the PLC concept. The PLC concept is best used to interpret product and market dynamics. The PLC concept helps managers characterize the main marketing challenges in each stage of a product's life and develop major alternative marketing strategies. It helps the company measure product performance against similar products launched in the past. The PLC concept is, however, less useful as a forecasting tool because sales histories exhibit diverse patterns and the stages vary in duration.

## **Conclusion and Recommendations**

The import of the product life cycle is quite simple, but frequently forgotten - change is inevitable. Baker (1999) says it is not only inevitable but that its pace is accelerating. The PLC concept's misunderstanding and misuse arise from the fact that people try to use it as a specific predictive device. This is clearly as misconceived as trying to guess the identity of a biological organism from the representation of a life cycle curve, which applies, equally to gnats and elephants.

Onu (2002) asserts that the success of any firm is a function of the acceptance of its products and services. These must be properly managed through the various phases of the product life cycle to avoid premature death. The PLC concept is, thus not only useful as a predictive tool, but helps us to clearly understand the present behavior of products in a particular class or category. McDonald (1999) succinctly declares that the PLC is not an academic figment of the imagination, but a hard reality, which is ignored at great risk.

In view of the importance of the PLC to business organizations, the following recommendations are made for proper management of the various phases of the product life cycle for success and maximum benefits;

A firm that plans to introduce a new product must decide when to enter the market. Timing is of essence. To be first can be highly rewarding but risky and expensive. To come in later makes sense if the firm can bring superior technology, quality or brand strength.

It is also wise for a firm to use products with a very long PLC to name and launch new products. This will enhance easy identification and acceptability of the product. Loyalty maintained for the existing products can be transferred to the new one. Hershey's, for example, has a very long PLC which has been used to name and launch new products. It has successfully introduced Hershey's Mugs, Hershey's Kisses with Almonds and Hershey's Cookies and Mint candy bar. NASCO has also used a very long PLC to name and launch new products such as NASCO Biscuits, NASCO Wafers, NASCO Carpets, NASCO Pack and other products.

To maximally benefit from the PLC concept, firms should build market share and sustain sales growth. This can be done by improving product quality and styling, adding new features and models, entering new market segments, increasing distribution coverage and lowering prices to attract price sensitive buyers.

To sustain and maintain the PLC of a product, the firm should stimulate sales by modifying the product's characteristics through quality improvement, feature improvement or style improvement. Also, sales can be stimulated by modifying other marketing mix elements.

The company should expand the market for its mature brands by increasing the volume of purchase and number of brand users. Volume can be increased by convincing-current brand users to increase their usage of the brand, while brand users can be expanded by converting non-users, entering new market segments and winning competitors' customers. The firm can also undertake brand repackaging to properly reposition the product in the market. This will ensure that the PLC is sustained in the market even where there is competition.

Firms should creatively innovate products at regular and frequent intervals to sustain the PLC. Product innovation prolongs the product life cycle and ensures continued profitability through the rejuvenation process. But where the firm finds a product to be too costly to handle with no hope for the future, it has the option to practice euthanasia and quietly dispose of the product which fails to live up to expectation.

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