Chapter 5
Product Life Cycle

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INTRODUCTION

Like individuals, products also gestate, born, develop, mature, become old and eventually pass away. The notion of the product life cycle describes the life history of the product, from conception to ageing or death. It is a span rather than a cycle. Pharmaceutical items follow the same trajectory as consumer goods, that is, an increase in sales, a sales plateau, and then its decline. This phenomenon is known as the product life cycle, or PLC.

To claim that a product has a life cycle is to say four things:

- The lifespan of a product is finite.
- Product sales go through several stages, each of which presents the seller with unique difficulties, possibilities, and challenges.
- Throughout the life cycle of a product, profits fluctuate.
- Throughout the course of a product's life cycle, various marketing, finance, manufacturing, purchasing, and human resource strategies are needed.

A customer may occasionally come across pharmaceutical items that were introduced to the global market decades ago but now appear to have attained immortality such as the drugs like aspirin, penicillin, cisplatin etc. The seeming immortality of these compounds is due to two factors. Either there haven't been any significant therapeutic innovations in their respective indications, in which case the products remain the appropriate therapeutic options today, or the products were significant therapeutic breakthroughs at the time of their introduction and are now regarded as reference drugs. This in no way represents the original manufacturer's sustained profitability, as they may have completely given up on the therapeutic market in response to intense competition from a plethora of similar goods.

We understand the procedure for product development, being pharmacy students. Basic research is typically the first step of a product development process, which is gradually followed by preclinical and clinical research phases that result in the development of a new drug application (NDA). This is a protracted period of negative profitability characterised by resource-intensive activities and no product sales.

Making the most of a product's revenue within the extremely brief window of retaining patent exclusivity at the time of introduction is one of the most crucial components of life cycle management. If the promotional campaign for the product begins at launch, it will typically take several months or even years for it to reach its growth levels. Premarketing is a crucial commercial strategy that pharmaceutical marketers can employ to increase consumer awareness before the product is made available. The introduction stage is cut down, and revenue is increased. Premarketing should typically begin at least two years prior to product launch, or at the start of clinical research Phase III. Premarketing requires a large investment of both human and financial resources. The management of the company must commit early to the potential new pharmaceutical product.

PHASES of PRODUCT LIFE CYCLE

The four different phases of the product life cycle: (S1) Introductory phase, (S2) Growth phase, (S3) Maturity phase, and (S4) Decline Phase, are shown in **Figure 5.1**.

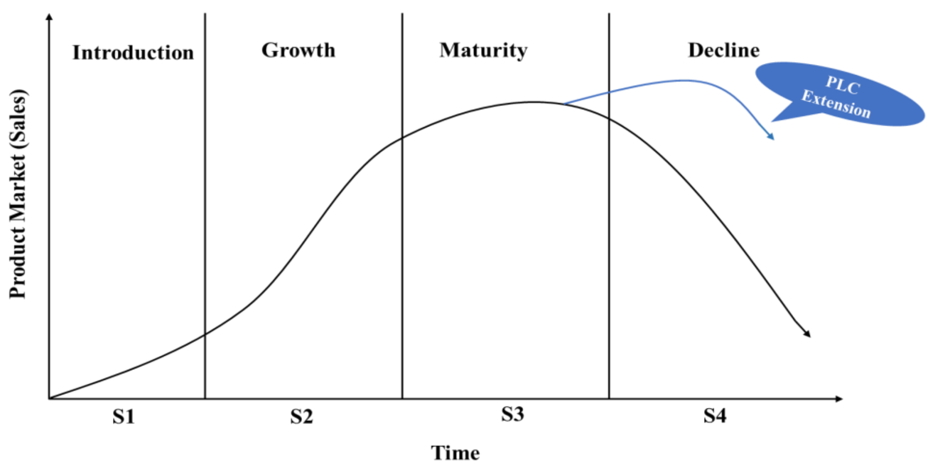

Figure 5.1: Product life cycle phases

The introductory phase is the market development phase because there is currently no demand for the product and no evidence that it can satisfy customers' expectations. Here, the marketing must focus on encouraging consumers to test the product. In fact, at this point a lot of marketing work is required. The sales are typically low and progress slowly. The intricacy of the product, its level of novelty, and how well it fits the needs of the client all influence how long the introduction period lasts.

The growth phase of the new product is also granting the market growth phase. The product's demand is increasing. As potential rivals who have been waiting and watching until now enter the contest, thus the market grows. It necessitates a shift in the originator's marketing approach and methods. The creator is compelled to shift his attention from finding strategies to persuade consumers to test the product to persuading them to prefer his brand.

The maturity phase is a sign of market saturation in the sense that all possible buyers have adopted the product, except those who have chosen not to do so. Increase in sales will be comparable to population growth. The demand levelling off and fierce rivalry define the mature phase. At this point, competitors engage in price wars and attempt subtle product differentiation. Competitive strategies should be followed which comprises of product augmentation attempts in packaging and advertising communication.

The decline phase is the end point of the product life cycle. Whether to inject new blood into the product life cycle to lengthen the maturity phase and avoid the decline phase, or to let the dying product die, depends on the marketers' intelligence and foresight that went into their product planning. (**Table 5.1**)

Table 5.1 Characteristic features of different phases of Product Life Cycle

Characteristic feature	**Introductory phase**	**Growth phase**	**Maturity phase**	**Decline Phase**
Sales	Low sales	Grow at an increasing rate	Peak growth	Sales dropped
Profit gain	Minimal or negative	Rising profits	High	Dropped
Production cost	High	Developmental cost starts to recover	Low cost per customer	Production is declining

Marketing Cost	High	Sales volume creates economies of sale	Require heavy promotions to both dealers and customers	Market is declining
Failure rate	High	Negligible	Depends on the market growth; will extend or decline	Rate of decline depends on how rapidly substitute products takes place

The concept of the product life cycle is beneficial because it enables you to foresee upcoming events and plan the best response against them. Understanding and appreciating the PLC concept might help product planning to be more rational. It facilitates the creation of valuable lead time for important strategic and tactical actions following the introduction of the product. It can be quite helpful in creating a sequence of systematic competitive movements, whether it's prolonging the shelf life of a product, or speeding up the introduction phase, or retiring and erasing an outdated product.

Numerous things can occur once the drug's patent protection expires. The sales in this phase depend on how successful the company has been at advertising the drug. Marketing tactics that could increase sales is by making improvements to the product and re-releasing it. This, however, comes at a price. Having a very strong brand identification is one effective strategy the business can attempt to lessen the loss of sales throughout the most recent period. As a result, customers will continue using the brand they are familiar with since they do not see the alternatives as viable alternatives. Making the product stand out from the crowd is a successful branding strategy. By giving the tablet or capsule a unique shape, this can be accomplished. Additionally, it can be manufactured with unique graphics printed on it or coloured.

MARKET LIFE CYCLE

Simply put, the market life cycle (MLC) notion is the whole life cycle of several rival brands and enterprises in a specific market, therapeutic category, or product class. Higher investment requirements, little or no profits, rapid growth, and peak profit levels are micro-level qualities or realities that apply to a product or, more specifically, a brand of a specific company rather than the market.

A market life cycle curve in the pharmaceutical sector may include several brands, and even various compounds, product classes, or subsegments in a specific therapeutic category. Take the case of the market life cycle which has been prolonged twice (E1 and E2). Product 'A,' which was launched around the same time as the market was evolving and had extended its life cycle once, running almost parallel to the MLC, but unable to utilize the opportunities when the market began its second extension with a remarkable growth phase (E2). That was the time when product 'C' entered the growth phase and even reinforced the growth phase of the MLC itself. Product 'B' never really took off in the real sense of the word, plateaued so early, and declined somewhat prematurely even while the market had been in its growth phase. (**Figure 5.2**)

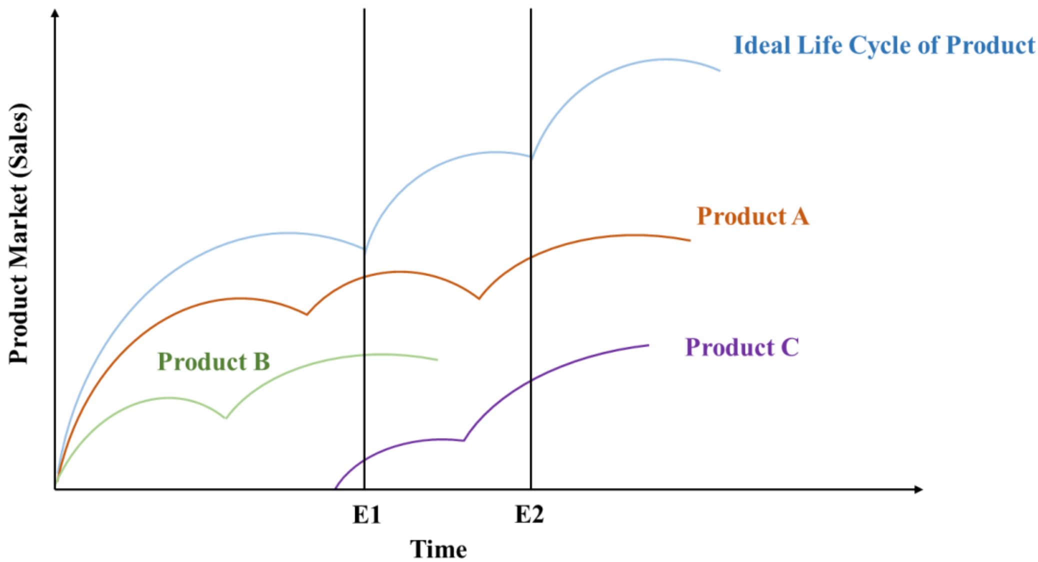

Figure 5.2: Market life cycle

Take a case of the aspirin market, which shows that the market life cycle can be prolonged indefinitely. The aspirin market has been around for more than 125 years or, should we say, is still quite young. Of course, there are peaks and valleys, have ups and downs in shares. However, it has survived every one of them. *Tylenol*, a Johnson & Johnson paracetamol brand, gained some market share from paracetamol in the antipyretic and analgesic industries because to mild side effects and a clever repositioning. But the medical and scientific communities are too aware of aspirin's therapeutic effectiveness to neglect it. Safer aspirin dosage forms, such as enteric-coated, buffered, and dispersible tablets, were introduced by some creative marketers. While many lesser-known products disappeared from the market, names like *Bufferin* (in the

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US), *Microfined* Aspirin (Nicholas in India), and *Dispirin* (Reckitt Coleman) succeeded well. The MLC and PLCs of popular brands, however, had been given fresh vitality. Research results from the middle of the 1980s have given a further boost to the centurion. Regular aspirin use is thought to reduce heart attacks in high-risk patients and may even prevent them. Once more the aspirin market is experiencing expansion. While the current manufacturers were busy increasing their capacity, many new bulk drug producers have emerged on the market.

Thus, successful maintenance of mature goods is more important than ever in the pharmaceutical industry today as part of product planning and management. This is required by the dwindling number of new drug launches. It's important to keep in mind that the PLC concept and implementation in pharmaceutical product planning must consider the fact that each market segment in which a product competes is at a distinct level or phase of development. This should be considered while making decisions in product management.