ASSIGNMENT

PHARMACEUTICAL MARKETING

PRODUCT LIFE CYCLE

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NEW PRODUCT DEVELOPMENT AND PRODUCT LIFE CYCLE

Define your product
An accurate description of the product you are planning will help keep you and your team focused and avoid NPD risk such as developing too many products at once, or running out of resources to develop the product.

Identify market needs
Successful NPD requires a thorough knowledge of your target market and its needs and wants. A targeted, strategic and purposeful approach to NPD will ensure your products fit your market.

Establish time frames
You need to allow adequate time to develop and implement your new products. Your objectives for developing new products will inform your time frames and your deadlines for implementation. Be thoughtful and realistic. Some objectives might overlap but others will be mutually exclusive.

Identify key issues and approaches
There are many tasks involved in developing a product that is appropriate for your customers. The nature of your business and your idea will determine how many of these steps you need to take. You may be able to skip or duplicate certain stages, or start some of them simultaneously

Key tasks include:

- Generating and screening ideas.
  Developing and screening concepts.
- Testing concepts.
- Analyzing market and business strategy.
- Developing and market testing products.
- Implementing and Commercialising products.

STAGES IN NEW PRODUCT DEVELOPMENT

1. Idea Generation
2. Idea Screening
3. Concept Development and Testing
4. Business Analysis
5. Product Development
6. Test Marketing
7. Commercialization
8. Launch

What Is the Product Life Cycle?

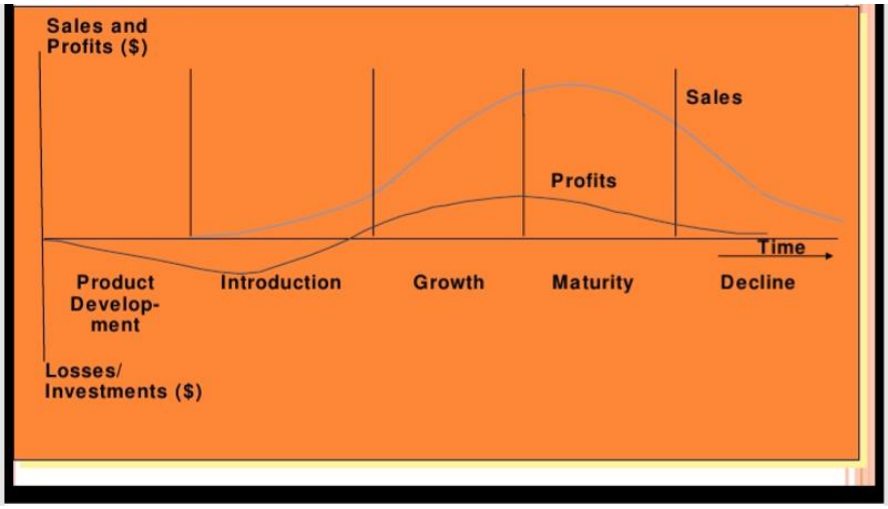
The product life cycle is the process a product goes through from when it is first introduced into the market until it declines or is removed from the market.

While some products may stay in a prolonged maturity state, all products eventually phase out of the market due to several factors including saturation, increased competition, decreased demand and dropping sales.

Additionally, companies use PLC analysis (examining their product's life cycle) to create strategies to sustain their product's longevity or change it to meet with market demand or developing technologies.

Product Life Cycle Stages Explained

The product life cycle has 4 very clearly defined stages - introduction, growth, maturity and decline.



1. **Introduction Stage** – This stage of the cycle could be the most expensive for a company launching a new product.
   During the introduction stage, marketing and promotion are at a high - and the company often invests the most in promoting the product and getting it into the hands of consumers. This is perhaps best showcased in Apple's famous launch presentations, which highlight the new features of their newly (or soon to be released) products.

   Marketing strategy used in introduction stage:

- ✓ **Rapid skimming:** launching the new product at high price and high promotional level.
- ✓ **Slow skimming:** launching the new product at high price and low promotional level.
- ✓ **Rapid penetration:** launching of product at low price with heavy promotion.
- ✓ **Slow penetration:** launching the new product at a low price and low level of promotion.

2. **Growth Stage** – The growth stage is typically characterized by a strong growth in sales and profits, and because the company can start to benefit from economies of scale in

production, the profit margins, as well as the overall amount of profit, will increase. This makes it possible for businesses to invest more money in the promotional activity to maximize the potential of this growth stage.

Marketing strategy used in growth stage:

- ✓ Improved product quality and add new product features and styling.
- ✓ Add new models and products of different sizes, color, shapes etc.
- ✓ Enter new market segments.
- ✓ Increase distribution coverage enter new distribution channels.
- ✓ Shift from product awareness to product preference advertising.
- ✓ Lower prices to attract next layer of price sensitive buyers.

3. **Maturity Stage** – During the maturity stage, the product is established and the aim for the manufacturer is now to maintain the market share they have built up. This is probably the most competitive time for most products and businesses need to invest wisely in any marketing they undertake. They also need to consider any product modifications or improvements to the production process which might give them a competitive advantage.

Marketing strategy used in maturity stage:

Market modifications:

- ✓ Converting non-users
- ✓ Entering new market segments
- ✓ Win competitors customers
- ✓ Redefine target market

Product modification:

- ✓ Quality improvement
- ✓ Adopting advance technology
- ✓ Product differentiation

4. **Decline Stage** – Eventually, the market for a product will start to shrink, and this is what's known as the decline stage. This shrinkage could be due to the market becoming saturated (i.e. all the customers who will buy the product have already purchased it), or because the consumers are switching to a different type of product. While this decline may be inevitable, it may still be possible for companies to make some profit by switching to less-expensive production methods and cheaper markets.

Marketing strategy used in decline stage:

- ✓ Increase the given firms investment to dominate the market or strengthen its competitive position.
- ✓ Maintaining the given firms investment level until the uncertainties about the industry are resolved.

- ✓ Decrease the firms investment selectively, by dropping the unprofitable customers group, while simultaneously strengthening the firms investment niche segments.
- ✓ Harvesting the firms investment to recover cash quickly.
- ✓ Divesting the business quickly by dropping off its assets as advantageously as possible.

Following Assumptions:

- ✓ Not all products introduced in the market essentially pass through all stages of its life cycle. It is also possible that product may attain introduction stage and then get phased out.
- ✓ There is no definite line of demarcation between the various stages of product life cycle.
- ✓ At the same time, a product may be in different stages of its life cycle in different segments of the market. For example, the product concerned may be in the introduction stage in Asian market while facing decline in western countries.
- ✓ The time span of each stage in product life cycle in respect of each product may vary. Thus, a product may experience longer period in growth stage and relatively short period in maturity stage.

Limitations of the PLC:

1. The life cycle concept applies best to product forms rather than to classes of products or specific brands.
2. The life cycle concept may lead marketers to think that a product has a predetermined life, which may produce problems in interpreting sales and profits.
3. It is only a descriptive way of looking at the behavior of a product and the life cycle can not predict the behavior of a product.

The product life cycle concept is based on Four Premises:

1. Products have a limited life.
2. Product sales pass through distinct stages, each with different marketing implications.
3. Profit from a product vary at different stages in the life cycle.
4. Products required a different strategies at different life cycle stages.

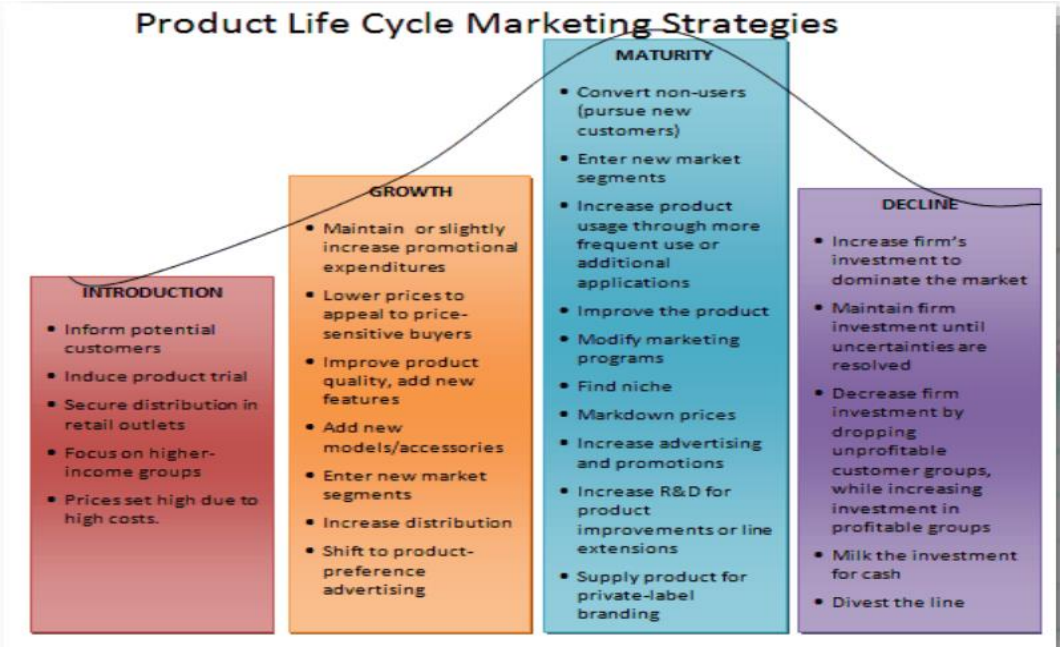
Importance of Product life cycle

- Helpful in sales forcasting.
- Helpful as a predictive tool.
- Helpful as a planning tool.
- Helpful as a control tool.
- Helpful in framing marketing programme.
- Helpful in price determination.
- Development of new product.
- Comparison of different products.

EXAMPLE

PRODUCT LIFE CYCLE OF ASPIRIN

- Aspirin market is about a century old.
- Early it was used as antipyratic-analgesic but lost in market to PCM and due to certain side effects of aspirin.
- It was repositioned in the market with safer dosage forms such as Enteric coated tablet, Buffered coated, dispersible tablets.
- Brands like Dispirin, Mivrofine, Aspro succeded while lesser known brands vanished from market.



LIFE CYCLE OF THE PHARMACEUTICAL PRODUCT AND PRIMARY STRATEGIC GOALS

PHARMACEUTICAL MARKET OVERVIEW

The pharmaceutical market, as a variety of the consumption markets and an element compounding the health services and pharmaceutical products market, includes manufacturers, wholesalers and retailers, consumers, pharmaceutical professionals and other employees, and also information flows and technologies used in the pharmaceutical activity.

There are three distinctive stages in the life cycle of a new drug:

(1) The research and development stage, up to its launch to the market,
(2) The period of time between its launch and the loss of exclusivity (for instance the patent expiry date) and
(3) The period after the loss of exclusivity, when generic drugs can enter the market.

Other changes in the life cycle of a medicine

- When a medicine is first marketed, it is protected by a 'patent'. This means that other companies cannot market a similar medicine. At the end of the patent or data protection period other companies will manufacture and market the same product. When this happens, the product is called a 'generic'.

- New medicines are usually licensed as Prescription-Only Medicines (POM). This means that healthcare professionals can supervise their use in the first few years. Where it is appropriate and safe to do so, the medicine can then be made available as an Over-The-Counter (OTC) medicine. This involves a change in the regulatory status of the medicine and a new licence is required. Patients can buy the OTC medicine directly from a pharmacy or supermarket (depending on the country)

- Once the expiry of the patent, a drug can be copied and manufactured by other pharmaceutical companies under a different trade name. This process is legally possible only if the license is acquired from the original manufacturer. The approval of a generic drug takes on average between 1 and 3 years, compared to 10 to 15 years required for the approval of an original drug, the costs of generic companies also being considerably lower that the costs of the pharmaceutical companies that developed the original product.

Some of the advantages and disadvantages associated to the production and use of generic drugs are listed below:

Advantages:

- The cost of a generic drug is 20-80% lower that of an original product, as the company that produced the generic drug does not have to recover the investment costs of clinical and pre-clinical research that a company manufacturing original drugs has paid for.
- The prescription of generic drugs by doctors, through the subsidised prescription system instead of original ones leads to savings for both the patients and the sanitary systems.
- Having a lower price, the generic drugs are available to a large number of patients.
- Generic drugs are manufactured according to the GMP (Good Manufacturing Practice) and the GLP(Good Laboratory Practice)
- The presence of generic drugs stimulates the competition between companies in terms of price.

Disadvantages:

- Generic drug manufacturing companies are required to include the same active substance in their product, but not the same excipients; the presence of other excipients (which provides a different form of conservation: colour, shelf life, stability) than those of the original product could generate adverse reactions.
- Generic products have only bioequivalence studies attesting that they are similar from pharmacokinetic point of view (absorption, distribution, transformation and disposal) and from pharmaco-dynamic point of view, but they are not supported by therapeutic clinical studies like the original products. The restrictions in terms of bioavailability (absorption rate and concentration) for which 2 products are reported bioequivalent are between 80-125% (according to the EMEA and FDA regulations).
- Generic drugs are mostly manufactured in laboratories located in developing countries, compared to the original ones that are synthetized in top laboratories in developed countries – thus there is risk of using different technologies in the drug manufacturing process.

DRUGS LIFE CYCLE AND CORRESPONDING STRATEGIC PLANS

The PLC pattern of the drug is done taking into account the macro- and micro environmental factors of the company, the participation of doctors in the creation of the demand, the particularities of the market share, the elasticity of the demand compared to the price, etc.

Table : Priorities in the marketing activities related to the life cycle of a pharmaceutical product

Stage of the life cycle	Priorities	
	Strategic purposes	Marketing program
Placing on the market	Creation of the demand	Information of current and potential consumers, of doctors and pharmacists on the new product placed on the market
Increase	Maximising the market share	Activation of sales and increase of turnover
Maturity	Maintenance of the market share	Consolidation of the company on the market segments gained
Decline	Minimisation of expenses	Concentration of the activities on the remained market

For domestic drug producers, the issue of determining the PLC represents an important and responsible moment. This opportunity is conditioned by the following aspects:

- the high level of market competition of the pharmaceutical companies;
- the extremely low parity of the population's purchasing capacity;
- low budget funds for the procurement of drugs by the medical and sanitary institutions;
- the harsh competition on the market between the products of the overseas producers and the domestic ones;

- the particularities of the drug supply system

The concept of new product has a quite large sense. Thus, Booz, Allen and Hamilton have identified the following categories of new products according to their novelty for the company and for the market:

- global innovative products;
- lines of new products;
- improvements of the lines of existing products;
- improvements of existing products;
- repositioning ;
- cost reductions.

The Objectives of the Product Strategy:

- strengthening its position within the existing segments of consumers
- increase of the consumption degree of a certain product it manufactures and/or sells;
- increase of the distribution degree of a certain product on the market for the attraction of new segments of consumers;
- differentiation from similar products of the competition;
- a better positioning within the range a product is part of and thus increase of its market share

Life-cycle Management

After a medicine enters the market, the development process continues to explore:

- Other possible uses (indications) for the medicine. For example, if the initial use was for patients with asthma, a new indication might be for patients with a different type of lung disease, for example a chronic obstructive pulmonary disease.

- Improved ways of making and using the medicine (new formulations). For example, a special formulation for children.

All of these activities are known as 'life-cycle management'.

KEY CONSIDERATIONS FOR SUCCESSFUL LIFE CYCLE MANAGEMENT (LCM)

A number of factors for successful LCM were identified. These success factors included the following:

- Governance and Organisation of LCM
- Core processes
- Knowledge and skills to support the process
- Monitoring and gauging success of the processes implemented.

The most successful LCM strategies were developed by those companies that were close to their customers and therefore had good market insight. Overall, success was achieved

through a combination of the right internal structure, processes and culture. Development of LCM strategies is, to some extent, formulaic, and has been described as ‘a process of knowing which questions to ask and effectively making go/ no-go decisions at every stage of the product lifecycle ’ .
More importantly, it is ‘a process of making the right decisions at the right time ’ for each product in the context of the overall product portfolio

One of the most critical stages of successful LCM is managing the expiration of a patent, through strategies such as

- Maximizing brand loyalty
- innovation regulatory and legal strategies
- introducing fixed-dose combinations (FDCs) investing in generics
- pricing strategies
- switching from prescription to an over-the-counter (OTC) product and
- Divestiture.

Before a specific approach is selected, a number of factors need to be taken into account:

- Is there sufficient time to implement the chosen strategy?
- What is the state of the company’s pipeline and how important is the brand in the portfolio?
- What type of market is it — a niche market or an under-established therapy area?
- How loyal are the customers (applicable to patients with chronic conditions)? Is there an unmet need that can be addressed?
- How will generics alter the competitive landscape?

This will depend on

- how easily the molecule and its delivery system can be reproduced
- the complexity or risk associated with administration
- the cost of the goods
- storage challenges
- what profit generics companies are likely to make.

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