

**Lesson No. 9.**

**Topic of the lesson: Assortment policy of a pharmaceutical organization. Product life cycle**

**Main issues to be discussed at the seminar:**

1. Product as a category of pharmaceutical marketing. Product range: breadth, completeness, depth, stability, harmony, richness
2. Characteristics of goods depending on their life cycle stages: strategic, basic, supporting outgoing goods.
3. Product policy in pharmacy. Main directions of product policy in pharmaceutical marketing.
4. Product competitiveness. Product quality management
5. Product life cycle. Marketing characteristics of the main stages of the product life cycle.
6. Innovation policy, main stages.
7. Assortment policy of a pharmaceutical organization. Main directions, their characteristics.
8. Management of the range of medicines, taking into account the speed of their implementation; establishing a list of medications in order to fully meet needs.

1. **Goods** are a product of labor produced for sale. A product is anything that is offered to the market for the purpose of use or application. Industrial goods are goods used in the production of other goods and services.

**Consumer goods** are goods that are purchased for personal consumption or use (pharmacy products).

**Assortment of goods** – availability of goods of all groups.

**An assortment group** is a group of products that are closely related to each other depending on one of the dominant characteristics.

**An assortment item** (commodity unit) is a specific product with individual characteristics inherent only to it

**Product nomenclature** is a set of assortment groups and product units.

**Assortment breadth** – the number of assortment groups.

**Breadth coefficient** is the ratio of the actual number of assortment groups (subgroups, classes) to the base, maximum possible.

**Assortment completeness** (saturation) - the total number of assortment items in all assortment groups.

**Completeness coefficient** is the ratio of the number of assortment items (product units) available in a pharmaceutical organization (actual completeness) to the number of assortment items that have received permission (basic completeness).

**Assortment depth** is the number of assortment items (product units) within one product of a specific assortment group (medicine, medical device).

**Depth coefficient** is the ratio of the actual number of assortment positions (product units) of one product name.

**Stability of the assortment** is the degree of change in the assortment group due to the inclusion of new and exclusion of old assortment items (product units).

**Harmony of the assortment** is the degree of proximity between goods of different assortment groups according to their purpose, requirements for release, distribution channels, etc.

2. **Strategic products** - assortment items located at the first stage of the life cycle (implementation), designed to ensure future profits.

**Core products** are assortment items that are at the second stage of the product life cycle (growth) and bring the main profits to the pharmaceutical organization.

**Supporting products** are assortment items that are in the third stage of the product life cycle (maturity) and bring significant profits.

**Outgoing goods** - those that are at the fourth stage of the product life cycle (decline) - are subject to gradual withdrawal from the market.

**Shelf life** is the period during which the medicinal product must fully meet all the requirements of the relevant state medicinal product quality standard.

Medicines with a limited shelf life – medicines with a shelf life not exceeding 2 years.

3. **Product policy** is the strategy and main directions of formation of the organization's assortment.

**Pharmacy product policy** is a management activity that ensures pharmaceutical products success in the market.

The pharmaceutical product policy is implemented in five main areas:

- ✓ increasing the competitiveness of goods and managing their quality
- ✓ life cycle analysis
- ✓ development of new products (innovation policy)
- ✓ packaging development and product design
- ✓ formation of product range (assortment policy)

Main directions of product policy:

1. increasing the competitiveness of goods and managing their quality
2. product life cycle analysis

4. **The competitiveness of a product** is a set of consumer and cost characteristics of a product that determine its comparative position in the sales market. A more competitive product is one that is produced and sold at lower costs and, therefore, has a higher profitability of its production and sales.

The condition for the competitiveness of a product is the maximum specific beneficial effect of the product. The specific beneficial effect is calculated using the formula:

$$\text{Specific beneficial effect} = \frac{\text{Beneficial effect of the product}}{\text{Costs of purchasing and using the product}}$$

This indicator is especially relevant today for the pharmacy system. Currently, different pharmacies may sell the same product at different prices. The competitiveness of the medicinal product will be higher in the pharmacy whose cost characteristics of the medicinal product are lower (with the same consumer, namely quality characteristics).

The main component of competitiveness is **the quality** of the product. Increased demands are placed on the quality of medicines. To ensure their high quality, a unified drug quality control system has been created.

### 5. Product life cycle. Main stages.

**The life cycle of a product** is the time a product spends on the market. This is a concept that describes the sales of a product, profit, consumers, competitors, marketing strategy from the moment the product enters the market until it is withdrawn from the market.

An obligatory stage in market research for individual drugs is to study the dynamics of sales volume within the product life cycle (PLC), the stage at which the sales volume is located during the study period.

**The product life cycle** is a concept that attempts to describe the state of the sales volume of a product from the moment it enters the market until it leaves the market.

ZhCT traditionally includes the main stages:

- ✓ introduction of goods to the market;
- ✓ height;
- ✓ maturity;
- ✓ decline

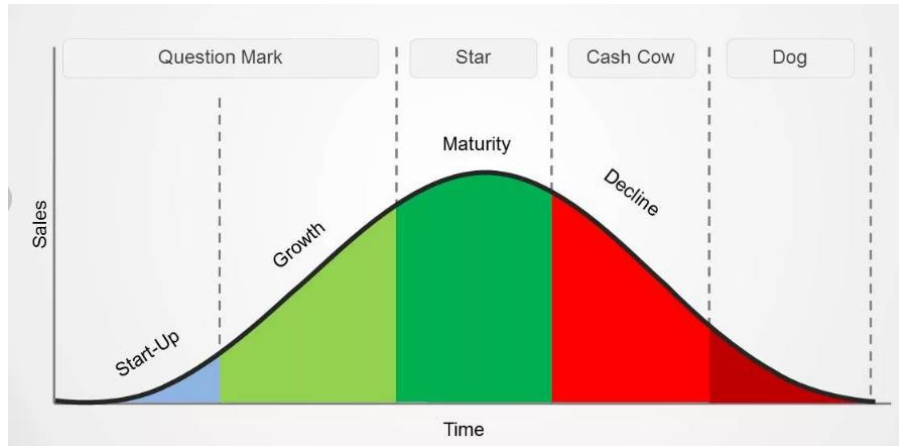


Figure 1. Product life cycle stages

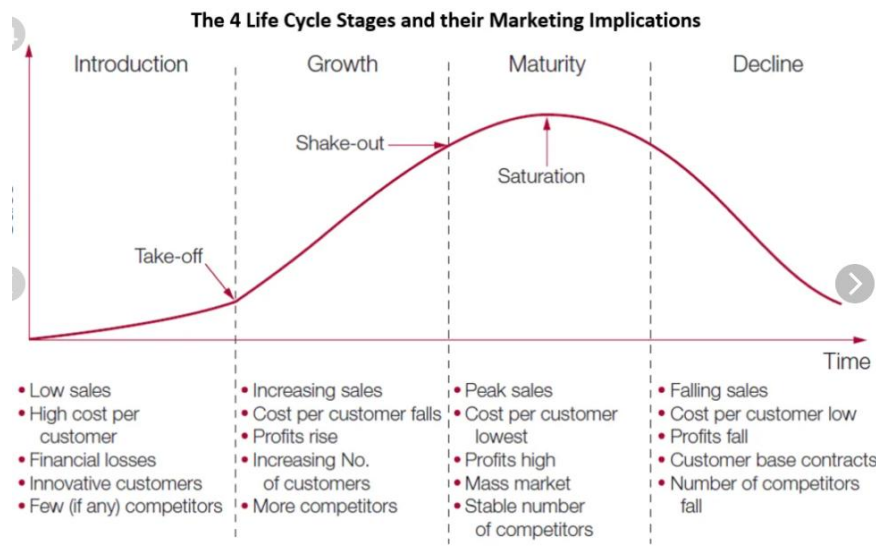


Figure 2. Marketing implications of product life cycle stages

Different drugs have different durations of the life cycle and each of its stages: from several days to several years. The stage of the life cycle determines the volume of sales and profits, the price of the product, the presence and number of competitors, and the amount of spending on marketing and advertising.

**The implementation stage** is characterized by a small sales volume. There are practically no competitors because The product is new, and therefore the prices are the highest. There is no profit yet or it is insignificant because... very high marketing costs.

One of the most important areas of marketing activity at this stage of the life cycle is an advertising campaign. Advertising allows you to significantly shorten the stage of product introduction and bring it to the second stage - growth, characterized by obtaining maximum profits.

There are various methods that can be used to evaluate the effectiveness of an advertising campaign.

Nonparametric analysis methods are among the simplest, most accessible and have sufficient accuracy.

**The second stage of life cycle is growth.**

This stage is characterized by a rapidly growing volume of drug sales, which is associated not only with the high cost of the product, but also with an increase in the quantity of goods sold. Such drugs are sales leaders and bring the main profits to the company. This group of drugs is called “core” or “star”, and it has good advertising support. There is active promotion of the product, a growing number of modifications of drugs (many other dosage forms, dosages and packaging) are appearing.

The task of marketing at this stage: advertising and expansion of the sales network for the mass sale of goods

**The third stage of life cycle is maturity.**

Gaining popularity, these drugs move into another stage of gastrointestinal tract - maturity .

This stage of life cycle is characterized by a slow increase in sales until a maximum is reached.

A large number of competitors causes prices to fall, prices are the lowest. Profits due to the fall in prices are reduced. Marketing costs are also being reduced.

The task of marketing at this stage: products at this stage do not require large advertising support costs, but require special sales promotion and maintain high profitability for the pharmacy organization.

**The fourth stage of life cycle is the decline stage.**

Characterized by a drop in sales volumes and low profits. Product prices are low and may increase at the end of the stage. The company withdraws from competition, the number of competitors decreases. Marketing costs are low.

Marketing objectives: extending the life cycle through advertising, improving products, changing prices, removing slow-selling goods from the market.

**6. Innovation policy of an enterprise** is the attitude of the enterprise management towards innovation activities, officially expressed in goals, principles, directions and forms of implementation.

Elements of innovation policy: setting goals and objectives for innovative development; development of effective methods and means of achieving set goals, as well as selection and organization of personnel capable of solving assigned innovative tasks.

The goal of innovation policy is to increase the competitiveness of products, enterprises and its economic indicators based on the development and implementation of innovative projects and programs.

The innovative objectives of an enterprise can be:

- ensuring compliance of the product structure by stages of the life cycle with the structure of innovations by stages of completion;
- identification of sources of innovation (our own developments or those brought in from outside);
- ensuring rational proportions between innovations of various types (for example, in terms of the degree of novelty and radicality).

The following can be proposed as the basic principles of an enterprise’s innovation policy:

- socio-economic efficiency of innovations;
- concentration of resources on strategic directions of development of the organization;
- respect for freedom of creativity and access to scientific and technical information;
- encouragement of innovative ideas and developments;
- compliance with current legislation;
- Social responsibility.

### 7. Assortment policy.

Determining *the optimal set of products* that ensure maximum economic efficiency of a pharmacy is the main task of assortment policy.

A **product line** is a group of products that are closely related, either because they function similarly, or because they are sold to the same groups of customers, or through the same types of outlets, or within the same price range.

The range of each group consists of several subgroups, types (drug - analgin); subtypes (dosage form - tablet, powder, solution for injection) and types of goods (medicinal preparations - solution for injection of different concentrations (25%, 50%) and volume (1.0 and 2.0 ml);).

**Product nomenclature** is the totality of all assortment groups of goods and product units offered to customers by a specific seller.

The emergence of new drugs on the market, changes in methods and pharmacotherapy regimens taking into account modern knowledge about the cause of a particular disease, an increase in morbidity, the continuous impact of advertising on demand, and price instability lead to unpredictable changes in the demand and consumption of drugs. Therefore, in market conditions and fierce competition, everything must be done to ensure that each assortment item is waiting for its potential patient at the right time and in the right volume, and when selling it must ensure that a profit is made. This is the essence of the market assortment policy of a pharmacy institution.

#### **Main directions of assortment policy :**

1. Determination of a rational set of drugs, taking into account the stage of their life cycle
2. Determination of the optimal breadth, richness, depth, and harmony of the product range.
3. Product innovation
4. Establishment of lists and lists of medicines
5. Optimization of the range of medicines, taking into account the speed of their implementation.

**The first direction** of assortment policy is the determination of a rational set of drugs, taking into account the stage of their life cycle.

#### **Strategic goods.**

These are products entering the market that are in the first stage of their life cycle and are designed to provide future profits. "Problem children" or "wild cats", because they need significant investment. Sales are growing, but profits are still negligible. Their market share is small. Marketing activities are aimed at transferring other stages of the life cycle to product groups.

#### **Main products**

These are products that are in the growth stage and bring the main profits. "Stars" or "flowers", the sales growth rate is very high. Their market share is 70-80%. Over time, they turn into groups B or G. (Viagra, Enap, Vitrum, Maalox, Smecta)

#### **Support Products**

These are products that are in the maturity stage and bring significant profits. "Cash cows" or "Trees that bear golden fruit" do not require significant investment. They are characterized by low sales growth dynamics. Proceeds from sales of this group go to finance other product groups, i.e. they can be "milked." The group of supporting products includes, for example, such domestic vitamin preparations as "Revit", "Undevit", "Aevit", "Ascorbic acid"

#### **Outgoing goods**

These are products that are in decline and are subject to gradual withdrawal from the market. "Dogs" or "losers" are not used in high demand, the profit is very low or zero. These are non-viable products. If it is recognized that it is advisable to take special marketing measures to "rehabilitate" a given group of goods, they can move to other product groups.

Thus, drugs that are simultaneously on the market are at different stages of their life cycle. Determining the optimal set of drugs, taking into account the stage of their life cycle, will allow us to create a product range that will provide the pharmacy with maximum profit.

**The second direction of assortment policy** is the determination of the optimal structure, breadth, completeness, depth, degree of use, renewal index, sustainability, harmony of product range

These indicators are relative values, and the corresponding coefficients are calculated.

**1. The structure of the range of medicinal products ( $S_f$ )** is characterized by the share of individual pharmacotherapeutic groups in the total number of names of medicinal products available in a pharmaceutical organization.

A coefficient or % is used for evaluation. Calculated using the formula:

$$S_f = \frac{A_f}{A_{\text{r}}} 100\%,$$

$A_f$  - assortment of pharmacotherapeutic group (number of items) in the analyzed pharmacy;

$A_{\text{r}}$  - is the total number of names of medicinal products approved for use.

For example: in total there are 2 thousand types of drugs in the pharmacy, of which 410 types include cardiovascular drugs,

$$S_f = \frac{410}{2000} 100\% = 21\% \text{ or } 0,21$$

**2. Assortment breadth** - can be analyzed at four levels and represents the quantity in the assortment: subclasses, groups, subgroups, types of goods available in the pharmacy.

**3. Completeness of assortment** is analyzed at the level of a specific type of drug and represents the number of subtypes (different dosage forms) of a given type.

Subtypes of drugs include dosage forms: tablets, dragees, capsules, injection solutions, ointments, suspensions, etc.

$$K_{n.m.} = \frac{P_{f.t.}}{P_{b.t.}},$$

$P_{f.t.}$  - actual completeness - number of different dosage forms of one medicinal products or pharmacotherapeutic group (PTG) available in a pharmaceutical organization;

$P_{b.t.}$  - basic completeness - the number of dosage forms of one drug or FTG approved for use (included in the state register of drugs).

Ideally,  $K_p = 1.0$ , but in reality it is in the range of 0.4-0.8.

**4. Depth of assortment** is analyzed at the level of a specific type and represents the sum of varieties of one type of product, assortment items, taking into account different dosages,

packaging and concentrations of one name of medicine.

For evaluation, relative indicators are used - depth coefficients.

$$K_z = \frac{G_f}{G_b},$$

$G_f$  - the number of names of medicinal products of one drug, taking into account the dosages, packaging and concentrations available to the pharmaceutical organization;

$G_b$  - the number of names of medicinal products of one drug approved for use according to the State Register.

**5. Degree of use of the assortment** — an indicator of the use (sold) of the range of drugs available in a pharmacy for a certain period.

An indicator of the degree of use of the assortment is the coefficient uses:

$$I = \frac{a}{A},$$

$a$  - the number of names of medicinal products of one drug that are in demand or sold by a pharmaceutical organization;

$A$  - is the number of names of medicinal products of one drug available in the organization during the analyzed period.

**6. Update index ( $J_o$ )** - this is the share of new drugs or groups of products that appeared on the market or in a pharmaceutical organization during a certain period of time.

This indicator is analyzed at the level of the entire range or individual pharmacotherapeutic groups.

Medicines that have appeared on the market over the past 3-5 years are considered new.

The update index is calculated using the formula:

$$J_o = \frac{m}{M},$$

$t$  - the number of names of new drugs or individual FTGs, types of goods in the assortment of the pharmaceutical organization;

$M$  - is the total number of names of drugs, PTG, types of goods in the assortment of the pharmaceutical organization.

The update index can vary **from 0 to 1**; the higher its value, the more effective the update of the analyzed drug range.

**The fourth direction** of assortment policy - Establishment of lists and lists of medicines

1. **Order of the Government of the Russian Federation dated October 12, 2019 No. 2406-r (as amended on August 24, 2022) "On approval of the list of vital and essential drugs, as well as lists of drugs for medical use and the minimum range of drugs necessary for the provision of medical care "** . Approval of a list of vital and essential medicines at the level of decree (order) of the government of the Russian Federation and regions (updated annually, this includes the most modern and effective medicines to form treatment standards; prices for these medicines are regulated by the state from the manufacturer from the retail link of the goods of movement).

In the regions, these lists are often used to formulate an assortment of medicines dispensed under preferential and free prescriptions. The inclusion of these medications by a pharmacy in its assortment can guarantee a certain stability of sales (with timely budget payment).

2. Government Decree RF dated June 30, 1998 No. 681 “On approval of the list of narcotic and psychotropic substances and precursors subject to control in the Russian Federation”

3. Various regional programs for the treatment of particularly social diseases - diabetes, oncology, tuberculosis, AIDS and HIV infection, motherhood and childhood, which also affects the formation of the pharmacy’s assortment.

4. At the hospital level - the use of a formulary treatment system (a formulary is a limited list of medicines approved for use in healthcare). At the same time, the most effective and corresponding to the morbidity structure in a given region are selected. Doctors and pharmacists participate in its formation.