

**Kyiv National University of Trade and Economics**  
**Management Department**

**FINAL QUALIFYING PAPER**

on the topic:

**«Management of the enterprises' product range»**

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**Kyiv 2018**

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## INTRODUCTION

**Thematic justification.** In the conditions of a significant saturation of consumer goods market, each enterprise receives a task of a balanced approach to the product range formation that would better satisfy the demand of customers than the range of competitors. The problem of optimizing the product range is extremely complicated, because a significant saturation of product range in enterprises allows to meet the best demand of customers, leads to a number of negative consequences, namely increase in inventories and slow down of its turnover, and, consequently, the deterioration of the final results of enterprises.

Proper management of the product range at enterprises is impossible without knowledge of its main features (characteristics), under which understand the specific features of the range, which are manifested in its formation. For the quantitative expression of the range properties, a number of relevant varieties of it is used.

Nowadays, the role of enterprises in the market is changing: there is a transition of trading enterprises to active market behavior, the development of program range policy on the basis of marketing. Its most important element is the revision of the product range, and in some cases, a significant re-profile of trade enterprises.

The works of many foreign and domestic scientists, including N. Cullen, B. Berman, J. Evans, M. Sullivan, D. Edcock, L. Weitz, F. Pankratov, A.A. Mazaraki, N.M. Ushakova, L.O. Ligonenko, A.M. Germanschuk and others are devoted to the study of problem issues in product range policy. However, in the papers of these scholars, it is recommended to use from two up to four and even seven indicators to assess product range. At the same time, the set of indicators varies considerably. All this calls for additional study of the characteristics of product range and indicators of its evaluation.

But it should be noted that at this stage, the problems associated with the research of product range are relevant and underdeveloped, since existing



publications are mostly descriptive and not adapted to the existing realities of the Ukrainian market, which greatly complicates their practical application.

**The aim of the final qualifying paper** is to develop proposals for improving the process of product range management at «Kharchovyk» PJSC.

To achieve this goal, the following **tasks** are defined:

- to identify the main stages of planning and approaches to the formation of the product range at the enterprise;
- to observe qualitative and quantitative indicators to assess product range of the enterprise;
- to analyze the formation process of product range management at the enterprise;
- to identify and assess economic efficiency of product range management at the enterprise;
- to substantiate measures for improving the process of product range management at the enterprise;
- to estimate commercial risk in the product range formation.

**The object of the final qualifying paper** is the process of managing the product range of «Kharchovyk» PJSC.

**The subject of the final qualifying paper** is a complex of theoretical, methodological and practical issues related to the management of the product range of «Kharchovyk» PJSC.

The methodological basis of the research is a dialectical method with a system-structural approach to study the theoretical foundations of the product range management at the enterprise. The formal-logical method was used in the study of the basic procedures for analyzing the effectiveness of the product range management of the enterprise. With the help of statistical, financial and economic methods, features of commodity range management at the enterprise and measures to increase its efficiency were considered.

The information base was presented by domestic and foreign publications, Internet sources and vital information of «Kharchovyk» PJSC activity.

The practical significance of the results is that the implementation of the recommendations that were developed for improving the product range management of «Kharchovyk» PJSC in the process of writing the paper. It was also carried out a consistent analysis of the activities and changes in the financial state of «Kharchovyk» PJSC.

Final qualifying paper consists of an introduction, three chapters, conclusions, bibliography with 34 sources and appendices. The total volume of the paper is 58 pages of main text with 10 figures, 11 tables, 3 app.

## **PART 1**

### **THEORETICAL AND METHODOLOGICAL BASIS OF PRODUCT RANGE MANAGEMENT AT THE ENTERPRISE**

#### **1.1. The main stages of planning and approaches to the formation of the product range at the enterprise**

In order to prevent the incorrect essence interpretation of the forming process of product range, the processes of product range formation and planning, which are considered in the professional literature as identical [4, P. 7; 6, P. 113], are considered as partial, subordinate to the general process of policy formation. Product range as a system vision of the product range development in the future determines qualitative and quantitative benchmarks for the development of product range plans and the formation of the product range on their basis [16, p. 97]. From these positions, it is believed that the planning and formation of the product range can only be considered in the context of the implementation of a product range, and their inherent methods constitute a methodical tool for the formation of product range policy. In addition, the implementation of these processes should take place in a hierarchical order, namely: «the formation of product range policy → product range planning → the formation of product range», and the last process can be considered as organizational (technical), when actually entering into agreements with suppliers, receipt of goods, their placement in warehouse and shopping areas of the store [14].

Product range formation, in accordance with the theoretical studies [4, P. 8; 11; 22], is associated with the definition of the goals, means and methods by which the goals can be implemented. Turning to the target orientations of the product range policy (more complete satisfaction of consumer demand, strengthening of market positions of the enterprise, optimal use of resource potential), it would be logical to assume the expediency of considering three principle approaches to the product range formation [13, P. 290]:



- product range formation on the basis of consumer preferences (in order to increase the consumer value of the offered product range);
- product range formation based on the expected competitive advantages (in order to strengthen the competitive position by increasing the competitiveness of the offered product range);
- product range formation based on a better distribution of limited resources (in order to increase the efficiency of the use of resource potential).

The isolation of such approaches is justified and sufficient, firstly, in terms of the objectives of the product range policy, and secondly, the factors whose impact is appropriate to take into account when it is formed.

The general aim of using any of the proposed approaches is to increase the effectiveness of the product range, and the direct choice of the most appropriate (prioritized) approach will depend on the availability of certain conditions for its application and taking into account the limiting factors. In the context of this stage of the study, under the conditions it should be understood the circumstances in which the use of one approach or another should be considered more justified, and limiting factors in this case will be those forces that can create obstacles to the effective implementation of the selected product range policy [14].

Taking into account the comments made, certain preconditions and limiting factors for each of the suggested approaches to the product range formation are defined (Table 1.1). The given characteristic of prerequisites and constraints on the feasibility of using the proposed approaches to the product range formation of enterprise can have a recommendation nature as a general level of product range management, and used within the management of individual product categories. In the latter case, different combinations of approaches can be used for different product groups [11, P. 195; 26, P. 241].

Having determined the target orientation and the preconditions in which those or other goals will be appropriate, it is necessary to ensure their implementation by certain methodological tools [16, P. 117].

Table 1.1

**Objective preconditions and restrictions on the application of different approaches to the product range formation at the enterprise**

<b>Approach to the product range formation</b>	<b>Objective prerequisites for use</b>	<b>Restrictive factors</b>
Product range formation based on consumer preferences	<ul style="list-style-type: none"> <li>– stability of demand for the main commodity groups of the offered product range;</li> <li>– low probability of the random factors influence on consumer behavior;</li> <li>– lack of internal opportunities for implementing more risky and, as a rule, more profitable options for product range policy;</li> <li>– availability of opportunities for systematic monitoring of consumer needs and high predictability of their changes;</li> <li>– low level of efficiency of product range by the criterion of consumer value</li> </ul>	<ul style="list-style-type: none"> <li>– resource capabilities (first of all, financial, spatial and personnel);</li> <li>– risk propensity of managers and anagement;</li> <li>– the terms of suppliers (insecure supply of goods, whose consumer value is increasing, leads to a loss of the loyal customers share);</li> <li>– competitor actions (activating competitors' activities may delay the reaction to the demand growth)</li> </ul>
Product range formation based on expected competitive advantages	<ul style="list-style-type: none"> <li>– availability of sufficient financial resources;</li> <li>– high organizational, personnel, marketing potential;</li> <li>– availability of product offers of innovative direction from manufacturers;</li> <li>– low level of product range efficiency by the criterion of competitiveness</li> </ul>	<ul style="list-style-type: none"> <li>– consumer demand (the task is complicated by the fact that consumers are not yet sufficiently informed about the product offered for sale, and are mostly conservative in their choice);</li> <li>– competitor actions (which create barriers to maintaining competitive advantages)</li> </ul>
Product range formation based on better use of resources	<ul style="list-style-type: none"> <li>– difficult financial position of the enterprise;</li> <li>– low technical, spatial, organizational and personnel capabilities;</li> <li>– low level of product range efficiency by the criterion of compliance with internal capabilities</li> </ul>	<ul style="list-style-type: none"> <li>– active development of the market segment in which the company operates;</li> <li>– aggressive actions of competitors</li> </ul>

Source: compiled by the author using [6; 7; 31]



Moreover, the question of choosing the latter regarding the product range formation in the professional scientific literature is debatable and, accordingly, requires some sort of systematization and argumentation as to the expediency of using separate methods in different economic situations. Thus, most researchers are inclined to list the main methods of planning (forming) the product range without linking to the objectives of not only product range policy, but also the development of the enterprise in general (Table 1.2).

*Table 1.2*

**Methodical tools for the product range formation and implementation of trade enterprise**

<b>Method</b>	<b>Characteristic</b>	<b>Advantages</b>	<b>Disadvantages</b>
1. BKG matrix (traditional and modified)	Provides positioning of goods according to the criteria «sales growth rate – share in total sales»	Ease of use, oriented only on internal information, combines techniques of concentration, dynamic, matrix and cluster analysis	Decisions should be based on past experience without taking into account possible changes in the needs of consumers; limited to internal information only
2. McKinsey Matrix	Provides positioning of goods according to the criteria «competitiveness of goods – the attractiveness of goods for the buyer»	Takes into account information about the expectations of competitors and buyers; takes into account strategic aspects; combines techniques of benchmarking and matrix analysis	Subjectivity, using only qualitative estimates, the accuracy of which is determined by the correctness of parameters choice; the absence of a logical connection between the indicators of the model
3. «Breadth – depth» matrix	Provides positioning of goods according to criteria of matrix «breadth of product range – depth of product range» in separate segments	Allows to group the product range proposal of the enterprise for clearly defined segments and develop strategies for the development of product lines in the product range portfolio, taking into account different levels of risk	Ignoring enterprise resources and its capabilities
4. Analysis of the life cycle of goods (LCG)	Provides positioning of goods according to criteria of the matrix «competitiveness of goods – LCG stage»	Combines quantitative and qualitative information, based on a multi-parameter approach; takes into account prospects of product lines development; combines techniques of benchmarking, dynamic and matrix analysis	Subjectivity of assessments, lack of correlation with the needs of consumers
5. Method of constructing	Determining the profile of the product line by	Allows to decide about the filling the product lines,	Lack of quantitative estimates of the

*Ending of the Table 1.2*

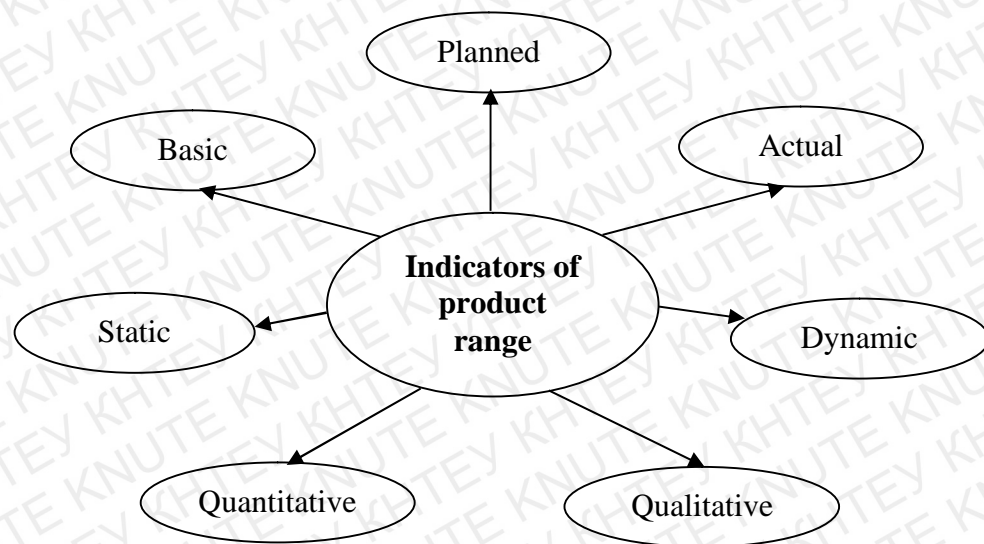
<b>Method</b>	<b>Characteristic</b>	<b>Advantages</b>	<b>Disadvantages</b>
a map of product line positioning by F. Kotler	volume of sales and overall profitability and making a decision on the feasibility of changes in its length	depending on their contribution to profitability, are the basis for developing a market strategy.	appropriateness of changes in the depth of the product line, ignoring consumer preferences
6. The Shell Matrix	Provides positioning of goods according to criteria of the matrix «prospects – competitiveness»	Combines quantitative and qualitative information, is based on a lot of parametric approach; takes into account the prospects for the development of product lines and has a strategic orientation; combines receptions of benchmarking, dynamic and matrix analysis	Subjectivity of assessments, the difficulty of defining and evaluating variables that must describe matrix criteria; abstraction from consumer preferences and interests
7. The method of ABC-XYZ analysis	The method of structural analysis, the results of which determines the rating of goods in the product range portfolio by the importance of providing sales volumes and demand stability	It makes it possible to establish the expediency of incorporating goods into product range, taking into account the realized demand and the level of expenses for its provision; provides the opportunity to accurately determine the required volumes of purchases by different product groups, taking into account the seasonality of their consumption	It does not allow alternatives consideration and commodity relations of different groups
8. Methods of portfolio analysis	Provides formation of product range portfolio as a target group of goods, which according to structure corresponds to the strategy	Based on internal information on volumes of sales, profitability of commodity items, the amount of working capital	Ignore changes in the competitive environment, consumer preferences and others components of the external environment
9. Matrix of compatible purchases	It involves studying the links between individual products presented in the range and assessing their intensity	Justify the decision on the expediency of storing the product in the product range if its sales are not effective enough	Application is limited to the study of consumer preferences; the lack of interconnection with the resources of the enterprise
10. Method of cost analysis (operational analysis)	Provides identification of the goods that make the most significant contribution to the formation of profits by assigning costs to specific commodity positions	Allows to establish the expediency of inclusion in the range of goods by the criterion of profitability	The scope of use is limited to managerial accounting, oriented only to internal capabilities of the enterprise

*Source: compiled by the author using [7; 15; 17; 20; 22; 24]*

Thus, the methodical toolkit covered covers a very wide range of product range issues and can be used in the process of its formation in all necessary conditions for this. In this context, it should also be noted that each enterprise is unique in terms of not so much the goals of its activities, how many means to achieve them. Accordingly, the range of problems that arise in connection with the formation of product range can vary significantly and require development and application of a specific methodical toolkit, which will most fully correspond to the identified problem areas.

## 1.2. Qualitative and quantitative indicators to assess product range of the enterprise

An analysis of existing approaches to the choice of the product range indicators allowed to conclude that an objective assessment of the product range at each particular enterprise can be obtained only using the system of the product range indicators (Fig. 1.1).



*Fig. 1.1. System of the product range indicators*

*Source: made by the author on the basis of [23, P. 200; 27]*

It should be noticed that the indicators are divided into basic, planned and actual. In the conditions of the commodity shortage for stores, product range lists



were approved, that is, lists of goods that must have been available at the store in order to meet the most essential needs of customers. Compliance with the product range lists was the responsibility of the stores. These lists were also used in analytical work when analyzing the product range in stores. With the elimination of the commodity deficit and the saturation of the consumer goods market, the approval of mandatory product range lists has lost its relevance. Instead, in the analytical work now began to apply the basic indicators, which are accepted as a basis for comparison.

Indicators regulated by normative or technical documentation, the maximum possible values of the indicators, or average values in the chain stores can be taken as baseline indicators.

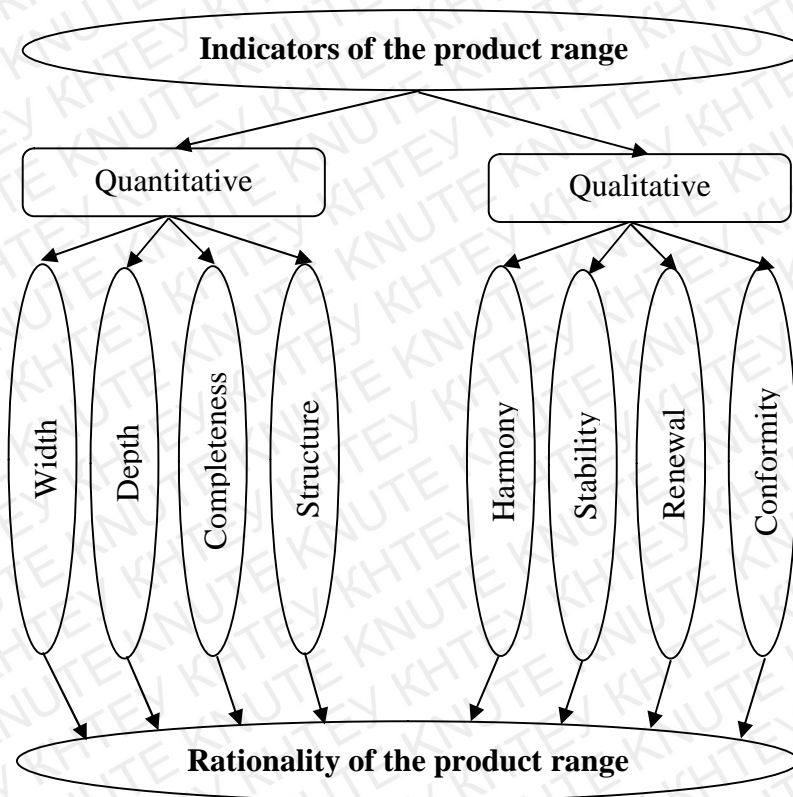
Planned indicators are used in the development of product range lists (product range matrices) for specific stores based on baseline indicators and existing business conditions.

Actual indicators of the product range reflect the current state of the product range at a certain time or interval of time. Each feature of the product range can be expressed quantitatively in absolute or relative index. Absolute indicator is a quantity that quantitatively characterizes the status of the product range. Relative indicator is an indicator that is derived from a comparison of actual and baseline indicators. The actual indicator is the value that characterizes the existing set of goods at a certain point of time. The basic indicator is a set of goods that is accepted as a basis for calculations [12, P. 119].

Qualitative indicators, in turn, allow to assess the product range in terms of its relevance to the demand of customers, the commodity profile of the store, etc.

Indicators of the product range can be static, which give a characteristic of the range feature at each particular moment (for a certain date, etc.), and dynamic, which allows to evaluate the processes of product range formation in stores during a certain period of time.

Let's dwell on the characteristics of the product range and the method of its calculation (Fig. 1.2).



*Fig. 1.2. Indicators of the product range assessment at the store*

*Source: made by the author on the basis of [8; 21, P. 176]*

An important quantitative indicator of the product range is its width. In our opinion, the breadth of product range should be understood as the total number of product range groups (product lines) and / or product categories that reflect the variety of product offerings of a trading company.

This feature is characterized by two absolute indicators – the actual and basic width, as well as the relative indicator – the width factor.

Actual width is the actual number of product groups (product lines) and / or product categories offered at each specific moment for sale.

Basic width is width adopted as a basis for comparison. The choice of criteria for determining the base width is determined by goals. For example, when analyzing the product range policy of competitor stores, the base rate can be taken as the maximum value in all surveyed stores.

It should be noted that the wider the product range is, the more diverse needs of consumers can be met. However, at the same time, it is difficult for a consumer

to be guided by this variety in an overly wide product range, which makes it difficult to select the desired product. Therefore, the management of enterprises should carefully approach the establishment of the basic width of the range.

Ambiguously, in the economic literature, the depth of product range is also interpreted, which [5; 8; 25, P. 24; 27]:

- displays the number of different commodity items in each product range group, characterizes the number of offered variants of a particular product;
- is determined by the varieties number of goods of each name;
- is determined by the number of product range groups;
- represents variants of a separate product offers within the limits of a separate group which are expressed by the varieties number of the goods on various signs.

It seems that the depth of the range should be interpreted as the quantity of product items within an product range or product category. The higher the index of depth of product range is, the more fully represented the specific range of a particular product.

The degree of demand satisfaction by buyers strongly depends on the completeness (saturation) of the range, that is, the ability to set the goods of a certain group or product category to meet the same needs. If the width indicators characterize the number of options for satisfying some need, then the indicators of completeness (saturation) determine the coverage area of this need. Thus, the saturation of the range, in our opinion, is nothing else than the product of the range width at its depth, that is, the total number of offered for sale varieties of goods. The greater the completeness of the range is, the higher the probability that the demand of buyers for the goods of a certain group will be satisfied. The highest values of completeness are on the saturated market. The considerable saturation of the range serves as one of the means of stimulating sales and satisfying various needs, due to different tastes, habits, buyers and so on. However, the increase in the completeness of the range requires traders to know the similarities and differences in consumer features of goods in different types, varieties and names in order to provide buyers with qualified advice. Despite the positive moment,



excessive saturation of the product range can lead to complications of consumer choice, so completeness should be rational [2, P. 100].

In order to assess and manage the product range, the indicators of the product range structure are also used, that is, the ratio of the totals of goods allocated on a certain basis in its general set. The range of the product range is characterized by the share of each product group or product category in the overall product range. It may also consider the intragroup structure of the range (commodity category structure). Structure of the product range determines the product range profile of the company and acts as an important factor in avoiding internal competition between similar by specialization and standard size of trade enterprises [32]. In addition, the importance of this characteristic for trading enterprises is that different product range groups have different profitability of implementation (which depends on the final results of the activity). While range structure is not optimal it decreases potential and actual level of profits, lead to loss of competitive position in advanced consumer and product markets and, consequently, reducing economic viability.

One of the important characteristics of the product range is to ensure its stability in trade enterprises. This characteristic of the product range is especially important when organizing trade in goods of everyday demand. The fact is that most buyers refer to the so-called «conservatives», who, evaluating a certain variety (name) of the product for a long time, do not change their habits of its acquisition. Therefore, in the absence of this product name, they will buy it from competitors.

Various scientists under the stability of the product range understand:

- permanent sale of the relevant commodity positions [12];
- the ability of a set of goods to meet the demand for the same goods. The feature of such goods is the presence of steady demand for it. It is noted that the coefficient of stability is the ratio of the number of species, varieties and names of goods that are in steady demand from consumers to the total number of species, varieties and names of goods of the same homogeneous groups [33].

In our opinion, the stability of the product range should be understood as the ability of the set of goods to meet the demand for the same goods, which is achieved by the constant presence of the sale of the corresponding commodity items. In this case, the coefficient of stability of the range should be calculated over a certain period, rather than one-time, as proposed by R.V. Perebyynis [28, P. 170].

Changing the needs of customers, improving the production of goods under the influence of various factors lead to a continuous updating of the product range. Update (novelty) of the range is the ability of a set of goods to meet the needs that have changed due to new products with higher consumer features.

The main reasons that encourage retailers to update the product range are:

- the need to replace obsolete goods that have ceased to be in demand from customers;
- the emergence in the market of new goods of improved quality;
- creation of competitive advantages of trade enterprises.

Buyers of new products are innovators or avant-gardists. New products satisfy not so much physiological as psychological and social needs.

An important characteristic of the product range, especially of specialized and highly specialized trade enterprises, is its harmony, which characterizes the degree of goods similarity of various product range positions and groups in terms of purpose, manufacturing technology, marketing methods [5]. It is not harmonious to consider the product range, when, along with product range groups, closely connected with each other, products of non-specific enterprises of commodity groups are included. Inclusion in the product range of stores that do not correspond to its product profile leads to an unjustified increase in the inventory of the store with all negative consequences, greatly complicates the search for the necessary goods buyers. At the same time, the non-harmony of the product range is allowed in cases where the company aims to change its commodity profile, penetration into other target markets and the conquest of a strong reputation there.

The product range of the trading company should match the demand of buyers in the best way. After all, the product range may be wide enough and deep, new, but not in line with the demand of a particular segment of the market. Accordingly, the degree of satisfaction with the available product range in the companies will be low. At the same time, in the economic literature, this fact does not pay attention, obviously because of the lack of necessary information and the difficulties of its additional receipt. Therefore, in order to assess the product range, it is proposed the introduction of an indicator of the product range suitability of buyers' demand, which should characterize the degree of customers' satisfaction with the available range. To calculate the matching ratio of the range, it should be conducted special customer surveys, or count it as the ratio of the number of buyers who made the purchase, to the total number of buyers. In the second case, the result will show a significant error, as, firstly, one purchase is often carried out by a whole family and, secondly, sometimes visiting the stores is carried out in order to get acquainted with the available product range or the search for the desired product.

Scholars [19, P. 68; 23, P. 199] indicate the necessity of using the rationality of the product range of merchandise goods in analytical work. Under the rationality of the product range, the property of a set of goods is understood to best serve the real needs of different segments of consumers. The rationally formed product range should be:

- fully extent, to ensure a high probability of satisfying the demand of different consumers and to ensure the effective operation of the enterprise;
- stable, guaranteeing satisfaction of consumer demand for goods of stable demand at each particular moment;
- the corresponding demand of different segments of consumers.

At the same time, the coefficient of matching the range of customers' demand shows how the range of the store satisfies the real needs of different segments of consumers at each particular moment.



To determine the rationality factor it is necessary, first of all, to establish the weighting factors of each indicator. To do this, can be used an expert method.

With a certain degree of reliability, the rationality factor can indicate the rationality of the current product range. The deviation of the actual value of the coefficient of product range rationality from the unit shows the difference between the needs predicted when assembling the range (planned product range), and real needs, backed by consumer demand.

Thus, the analysis made it possible to conclude that both in educational and scientific literature a single approach to the characteristics of the trade product range and the indicators of its evaluation is not developed, and allowed to allocate the most substantiated list of characteristics and indicators of product range evaluation for the trade enterprises (Table 1.3).

Table 1.3

### Indicators of the product range of trade enterprise

Indicator	Indicator content	Formula for calculation
<i>Quantitative</i>		
Coefficient of range width $C_w$	The ratio of the actual number of product range groups and / or product lines ( $A_f$ ) to the number of product range groups and / or product lines provided by the base list ( $A_b$ )	$C_w = \frac{A_f}{A_b}$
Coefficient of range depth $C_d$	The ratio of the actual number of species, varieties and names of goods of a homogeneous group ( $P_f$ ) to its number provided by the base list ( $P_b$ )	$C_d = \frac{P_f}{P_b}$
Coefficient of range fullness (saturation) $C_f$	The ratio of the actual number of product range items ( $N_f$ ) to the number of items provided by the base list ( $N_b$ )	$C_f = \frac{N_f}{N_b}$
Structure of product range $C_g$	The ratio in the product range of shares of individual groups (product categories, subgroups etc)	$S_g = \frac{N_g}{N_{total}} \times 100$
<i>Qualitative</i>		
Coefficient of product range harmony $C_{prh}$	The ratio of the number of relevant company's commodity profile ( $N_r$ ) to the number of items provided by the base list ( $N_b$ )	$C_{prh} = \frac{N_r}{N_b}$
Coefficient of product range stability $C_{prs}$	Characterizes the constant presence in the store of goods provided by the product list	$C_{prs} = \frac{\sum_{i=1}^n N_{fi}}{n \times N_{pr}}$

## Ending of the Table 1.3

Indicator	Indicator content	Formula for calculation
Coefficient of product range renewal $C_{pr}$	The ratio of new products ( $N_n$ ) to the actual number of varieties of goods ( $N_a$ )	$C_{pr} = \frac{N_n}{N_a}$
Coefficient of demand compliance $C_{dc}$	The ratio of the number of customers who are satisfied with the range ( $N_{satis}$ ) to the total number of potential buyers ( $N_{total}$ )	$C_{dc} = \frac{N_{satis}}{N_{total}}$
Coefficient of rationality $C_r$	The weighted average value of the rationality indicator, taking into account the real values of fullness indicators, stability and demand compliance for goods of different groups multiplied by the corresponding weighting factors	$C_r = \frac{C_f \times C_{wf} + C_s \times C_{ws} + C_{dc} \times C_{wdc}}{3}$

Source: grouped by the author on the basis of [3, P. 337; 7, P. 115; 10]

In our opinion, the indicators of the product range in the trade enterprises have different practical uses. Some of them should be used in the development of product range policy of the enterprise (the development of product range list, product range matrix), others – in the process of enterprise activity to monitor compliance with the policy (control over compliance with the prescribed range, use for the bonus of employees, etc.). The first ones include indicators of width, depth, structure, harmony and updating of product range, and others include indicators of completeness, durability, conformity and rationality of the product range.

Given above product range indicators can find use in the practical activities of trading enterprises both at the stage of development of product range policy, as well as in the organization of control over the available product range.

So, product range formation is associated with the definition of the goals, means and methods by which the goals can be implemented. Turning to the target orientations of the product range policy (more complete satisfaction of consumer demand, strengthening of market positions of the enterprise, optimal use of resource potential), it was proved the expediency of considering three principle approaches to the product range formation: product range formation on the basis of consumer preferences; product range formation based on the expected competitive

advantages; product range formation based on a better distribution of limited resources.

Taking into account the comments made, certain preconditions and limiting factors for each of the suggested approaches to the product range formation are defined. They have a recommendation nature as a general level of product range management, and used within the management of individual product categories. In the latter case, different combinations of approaches can be used for different product groups.

The degree of demand satisfaction by buyers strongly depends on the completeness (saturation) of the range, that is, the ability to set the goods of a certain group or product category to meet the same needs. If the width indicators characterize the number of options for satisfying some need, then the indicators of completeness (saturation) determine the coverage area of this need. Thus, it was proved that the saturation of the range is nothing else than the product of the range width at its depth, that is, the total number of offered for sale varieties of goods.

In order to assess the product range, it is proposed the introduction of an indicator of the product range suitability of buyers' demand, which should characterize the degree of customers' satisfaction with the available range.

An important characteristic of the product range is its harmony, which characterizes the degree of goods similarity of various product range positions and groups in terms of purpose, manufacturing technology, marketing methods.

The stability of the product range should be understood as the ability of the set of goods to meet the demand for the same goods, which is achieved by the constant presence of the sale of the corresponding commodity items.

With a certain degree of reliability, the rationality factor can indicate the rationality of the current product range. The deviation of the actual value of the coefficient of product range rationality from the unit shows the difference between the needs predicted when assembling the range (planned product range), and real needs, backed by consumer demand.



**PART 2**  
**INVESTIGATION OF THE PRODUCT RANGE MANAGEMENT**  
**AT «KHARCHOVYK» PJSC**

**2.1. Analyzing the formation process of product range management at the enterprise**

For many Ukrainian enterprises, the product range is still an intuitive process, and modern analytical techniques are not used to make product range according to market needs. Therefore, studying the ways and methods of optimizing the product range of enterprise is relevant, gaining special significance and practical value. In this regard, in this chapter, the results of the formation and management of the product range at «Kharchovyk» PJSC are presented.

At this stage, «Kharchovyk» PJSC uses the strategy of deep penetration into the market by offering existing products in the existing market. However, based on the research results, the product range of «Kharchovyk» PJSC wines is not complete today. Many varieties in the last 2-3 years have become unprofitable for growing due to a drop in demand for certain varieties and an increase in demand for new varieties that the company offers in small quantities. There is a need to bring to the market new popular varieties that would replace unprofitable ones. At this stage, the company works with all segments of the modern market in the region: farmers, private individuals and does not plan to enter the new market.

Therefore, the most relevant for the development of the company and increase sales is the implementation of a product development strategy. It involves the introduction to the product range a new product range positions or improvements existing in the modern market. As part of the product development strategy, a combination of such product range strategies is relevant: 1) horizontal diversification (introduction of new varieties of wines); 2) vertical diversification (the introduction of new types into the range of existing varieties of wines).

To determine the strategy of «Kharchovyk» PJSC, depending on the competitive position and attractiveness of the industry, the McKinsey matrix (Fig. 2.1) is used. This method takes into account information about the expectations of competitors and buyers; takes into account strategic aspects; combines techniques of benchmarking and matrix analysis.

Strategy for «Kharchovyk» PJSC on the wine market

		Competitive positions		
		<i>STRONG</i>	<i>AVERAGE</i>	<i>WEAK</i>
The attractiveness of the industry	<i>STRONG</i>	Hold positions / investing	Invest / reinvest profit	Invest / reinvest / exit
	<i>AVERAGE</i>	Reinvest profit / maximize profit	Extract the maximum benefit / exit	Stay / slow exit
	<i>WEAK</i>	Extract the maximum benefit / exit	Slow exit	Fast or slow exit / stay

Fig. 2.1. Strategy of «Kharchovyk» PJSC by the McKinsey matrix

Source: made by the author on the basis of company's activity analysis

For «Kharchovyk» PJSC investment strategy is vital, and more specifically – investment in the development of the product range, expanding new types of wine that are demanded by the market. The company's position on the market are average, but there is a risk of its weakening as a result of ignoring the update of the range.

Using the Hofer-Schendel matrix [30], a strategy for «Kharchovyk» PJSC should be chosen (Fig. 2.2). This method combines quantitative and qualitative information, based on a multi-parameter approach; takes into account prospects of product lines development; combines techniques of benchmarking, dynamic and matrix analysis.




		Competitive position			
		STRONG	AVERAGE	WEAK	THE WORST
Stage of market evolution	DEVELOPMENT / CROWDING OUT	Strategies to increase market share			Promotion
	GROWTH	Growth strategies (urgent for «Kharchovyk» PJSC)			or Liquidation
	MATURITY / SATURATION	Strategies for increasing profit	Concentration on its own market and		or Refusal
	ABATEMENT	Strategies for reducing assets			

Fig. 2.2. Urgent business strategy for «Kharchovyk» PJSC by the Hofer-Schendel matrix

Source: made by the author on the basis of company's activity analysis

Taking into account the stage of market evolution (growth) and the competitive position of «Kharchovyk» PJSC on the wine market of Odessa region (average), the relevance of the growth strategy has been determined. In this case, the strategies for increasing revenue through the introduction new, more popular and profitable varieties of wines into the product range are relevant.

The modification of the product range strategy was carried out using the MCC method [33, P. 188]. This is the strategic planning method, which is the tool for choosing between different possibilities of using limited resources of the company: projects, products, business units. The result of the choice should be



concentration of efforts and resources in those areas that are most important and perspective in terms of long-term development of the company (Fig. 2.3).

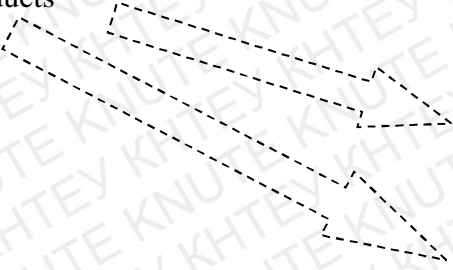
		Mission Match	
		LOW	HIGH
Mission match	HIGH	<p><b>DISSOLVENTS</b></p> <p>1. Maintaining a constant range of products</p> 	<p><b>ENGINES</b></p> <p>1. Improvement of production technologies.</p> <p>2. Improving the quality of seedlings.</p> <p>3. Optimization of price policy.</p> <p><b>4. Introduction into the product range new types of wines by existing sorts (early, medium, wine).</b></p> <p><b>5. Introduction t into the product range new types of drinks (cognac, vermouth)</b></p>
	LOW	<p><b>EXPRESSORS</b></p> <p>No projects in quadrant</p>	<p><b>DISTRACTING</b></p> <p>No projects in quadrant</p>

Fig. 2.3. Projects of «Kharchovyk» PJSC on the MCC matrix

Source: made by the author on the basis of company's activity analysis

Therefore, it is necessary to modify the product range strategy from the strategy of providing a constant product range (preserving the product range) to the strategies of horizontal and vertical diversification of the product range.

In order to meet the key competence regarding the ability to implement the proposals needed by the market, it is recommended to replace the project with the constant product range with the following projects: introduction into the product range new types of wines according to existing sorts (early, medium, wine); introduction into the product range new types of drinks (cognac, vermouth). These projects are capable of ensuring compliance with key competences, as they involve

the introduction of wine sorts and types relevant for the buyer, which will meet the current demand on the wine market.

Consequently, due to the use of MCC matrix, a project that is not in line with key competencies is identified, and two new projects are proposed within the framework of a modified product range strategy aimed at diversifying the range (both vertical and horizontal).

But it should be noted that the production capacity of «Kharchovyk» PJSC is limited, the area of the land is occupied by the cultivation of grape seedlings, therefore, for the implementation of a new product range policy, it is necessary to decide on the withdrawal of unprofitable sorts from the range, which today are no longer able to pay back the costs of their cultivation. For this purpose, an analysis was carried out for each type of wine, taking into account the following results of the analysis of sales by the ABC method, which will be carried out in the next paragraph.

## **2.2. Economic efficiency assessment of product range management at the enterprise**

In order to analyze the product range of «Kharchovyk» PJSC, ABC-method was chosen [9, P. 27]. Its essence is to attribute to each commodity some qualitative sign (symbol), which will characterize its status within the framework of the whole product range, and the commodity group to which it belongs. However, the qualitative attribute, attributed to the product should directly depend on any quantitative measure of the trading company activity concerning this product. The best fit is such a figure as the amount of proceeds received from the sale of goods for the period (value of turnover for this product).

The data about the results of sales of three product groups on «Kharchovyk» PJSC for the period should be considered. The first group includes 14 positions, the second – 12 and the third – 11. The term «position» implies that goods belonging to the same product group may differ only by the name of its trademark.

Obviously, the goods of different groups can be quite diverse and not be subjected to comparisons by its physical characteristics (attributes). However, one common to all goods indicator – the value of goods turnover over the period was chosen.

The positions according to this indicator should be ranked: it is sorted in the order of decreasing the value of its turnover (Table 2.1, column 4).

The necessary designations of the indicators should be entered. The number of items in the product range is denoted through  $n$ , the value of the goods turnover is denoted through  $x_j$ , where  $j = 1, \dots, n$  – is the index (serial number) of the position assigned to it after the ranking (Table 2.1, column 8). Also  $x$  – is the value of the turnover of trade enterprises for the period.

Next, the turnover share of each position in the turnover of investigated enterprise should be calculated (Table 2.1, column 5).

$$d_j = \frac{x_j}{x}, j = 1, \dots, n \quad (2.1)$$

The next step is to calculate the accumulated (cumulative) share of the position in the turnover. The indicator characterizes the contribution of the set of positions in the turnover of «Kharchovyk» PJSC. The positions are reorganized in the order of reducing its contributions to the turnover of investigated enterprise. As a result, the accumulated share in any line of the table 2.1 characterizes the contribution of the most significant positions in the turnover of «Kharchovyk» PJSC (Table 2.1, column 6):

$$D_j = \sum_{k=1}^j d_k, j = 1, \dots, n \quad (2.2)$$

Consequently, the cumulative share itself will be the quantitative characteristic that will allow to combine positions in the so-called ABC-groups.

Now let's look at the ABC-groups themselves. To do this, the rule of Pareto «80-20» should be used. This is unique in its practical value rule in the annex to the analysis of the product range and will be read as follows: «80% of the



enterprise's turnover provide 20% of the product range, and 20% of the remaining turnover provide other 80% of goods».

The positions that provided «Kharchovyk» PJSC at least 80% of the turnover were selected. To do this, such test was made:  $D_j \leq 80\%$  or  $D_{j-1} < 80\%$  and  $D_j > 80\%$ ,  $j = 1, 2, 3, \dots$  (Table 2.1, column 6).

The last one on this list is Wine «Cabernet» PREMIUM. Its cumulative share amounted to 83.01%. Thus, two groups of goods were received: the first group provides at least 80% of the turnover, the second – no more than 20%. However, this is a very «rough» breakdown, which will not provide the necessary analytical information for making any correct management decisions in terms of optimizing the product range of «Kharchovyk» PJSC.

That's why each of the groups received should also be divided according to the rule of Pareto «80-20». For the first group the following checkpoint was got – the cumulative share in the turnover:  $80\% \cdot 80\% = 64\%$ , for the second –  $20\% \cdot 80\% = 16\%$ . Thus, 4 groups were created:

- 1) *the first group* provides 64% of the turnover (the list of items completes the Wine «Peach» white, Table 2.1, column 6);
- 2) *the second group* provides 16% of the turnover (the list of items completes the Wine «Cabernet» PREMIUM);
- 3) *the third group* provides another 16% of the turnover (the list of positions completes the Wine «Merlot Classic»);
- 4) *the fourth group* provides 4% of the remaining turnover.

The resulting groups of positions are already becoming more «understandable» in terms of assessing its significance. Taking into account that the product range of «Kharchovyk» PJSC is significant, then one more additional breakdown of the first group is necessary. It should be done since the 64% contribution of this group's positions to the turnover is quite significant and the status of individual positions that are part of the group needs to be clarified. Continuing the partition by the rule of Pareto «80-20» a new control point was got –  $80\% \cdot 64\% = 51,2\%$ . The group provides 51.2% of the turnover.

**Ranking the position of «Kharchovyk» PJSC by the turnover size**

<b>Commodity group</b>	<b>Product name</b>	<b>Sales volume, ths. units</b>	<b>Turnover, ths. UAH</b>	<b>Share in turnover, %</b>	<b>Cumulative share in turnover, %</b>	<b>ABC-sign</b>	<b>Item number</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Semi-sweet wine	Wine «Muscat» white	1 511	60 591,10	19,94	19,94	A	1
Dessert wine	Wine «Bastardo»	1 749	50 808,45	16,72	36,66	A	2
Dessert wine	Wine «Muscat red»	964	40 825,40	13,43	50,09	A	3
Dry wine	Wine «Cabernet»	743	24 519,00	8,07	58,16	A	4
Semi-sweet wine	Wine «Peach» white	345	18 595,50	6,12	64,28	A	5
Semi-sweet wine	Wine «Chateau de Wine» white	312	16 536,00	5,44	69,72	B	6
Semi-sweet wine	Wine «Chateau Royal» white	457	14 806,80	4,87	74,59	B	7
Dry wine	Wine «Chardonnay» white	216	13 856,40	4,56	79,15	B	8
Dry wine	Wine «Cabernet» PREMIUM	372	11 718,00	3,86	83,01	B	9
Dry wine	Wine «Saperavi» PREMIUM	331	8 970,10	2,95	85,96	B-C	10
Semi-sweet wine	Wine «Chateau de Wine» red	113	5 989,00	1,97	87,93	B-C	11
Dessert wine	Vermouth «Marelli Blanc»	132	4 092,00	1,35	89,28	B-C	12
Dry wine	Wine «Sauvignon» PREMIUM	143	4 004,00	1,32	90,60	B-C	13
Semi-sweet wine	Wine «Chateau Royal» red	71	3 770,10	1,24	91,84	B-C	14
Dry wine	Wine «Saperavi Classic»	125	3 500,00	1,15	92,99	B-C	15
Dessert wine	Wine «Cahors»	54	3 461,40	1,14	94,13	B-C	16
Dessert wine	Wine «Isabella»	49	2 513,70	0,83	94,95	B-C	17

Commodity group	Product name	Sales volume, ths. units	Turnover, ths. UAH	Share in turnover, %	Cumul in tur
1	2	3	4	5	
Dry wine	Wine «Sauvignon Classic»	46	2 431,10	0,80	9
Dry wine	Wine «Merlot Classic»	48	2 253,60	0,74	9
Semi-sweet wine	Wine «Muscat» red	31	1 457,00	0,48	9
Semi-sweet wine	Wine «Isabella»	26	1 329,90	0,44	9
Dry wine	Wine «Chardonnay» PREMIUM	26	1 203,80	0,40	9
Dry wine	Wine «Muscat Classic» white	21	1 029,00	0,34	9
Semi-sweet wine	«Black Cardial» red	29	880,15	0,29	9
Dessert wine	Vermouth «Marelli Cherry»	35	805,00	0,26	9
Semi-sweet wine	Wine «Quince» white	24	576,00	0,19	9
Semi-sweet wine	Wine «Glintvine»	16	483,20	0,16	9
Dessert wine	Vermouth «Marelli Mojito»	19	437,00	0,14	9
Dry wine	Wine «Shelkovitsa» red	17	435,20	0,14	9
Dry wine	Wine «Raspberry» red	9	409,50	0,13	9
Dessert wine	Wine «The sun in the glass»	7	341,25	0,11	9
Dry wine	Wine «Kyzyl» red	13	338,00	0,11	9
Dessert wine	Vermouth «Marelli Plum»	12	300,00	0,10	9
Dry wine	Wine «Garnet» red	13	279,50	0,09	9
Dessert wine	Wine «Wild cherry» (merry)	7	172,90	0,06	9
Semi-sweet wine	Wine «Glintvine» white	4	117,00	0,04	9
Dessert wine	Wine «Currant»	2	56,80	0,02	1

Source: made by the author on the basis of analysis [18]



Now symbolic names to groups and goods that are included in it should be assigned (Table 2.1, column 7 and Table 2.2).

Table 2.2

**Assigning symbolic names to groups and products that are included in it**

<b>Group</b>	<b>Share of the group in the turnover</b>	<b>Cumulative share of groups in turnover</b>	<b>Characteristics of goods included in the group</b>
A	64%	64%	Goods-leaders that determine the commercial and financial position of the company, its status on the market. Usually – these are goods that have long been in the product range of the enterprise and are well-known to consumers. Most often they bring the biggest profit to the enterprise. Even if the goods do not quite suit the management of the company in terms of its profitability, withdrawal from the product range may be associated with significant risk for the company. The group may include important accompanying products of the product range of the enterprise
B	16%	80%	Related products that are important for the company, as well as goods that have recently been introduced into the product range or products that have lost its former status as sales leaders
B-C	16%	96%	Not significant for the company related products, as well as goods that have recently been introduced into the product range or goods that have lost its former status as sales leaders, are not significant
C	4%	100%	Products that can be withdrawn from the product range without any risk (unless some of them have unique attributes that play an important role for consumers, which is usually unlikely in most cases), as well as products that have been recently introduced into the product range

Source: compiled by the author on the basis of analysis in Table 2.1

It is necessary to pay attention to the number of positions, which are included in the group «A» and group «C» product range of «Kharchovyk» PJSC. Five positions provide 64.28% of the turnover and 18 positions – only 3.5%. Such a relationship between the number of positions and its contribution to the turnover is the «normal» situation for trading enterprise.

Next, an ABC-analysis in the context of each of the product groups should be conducted. As a result, the following tables for the ABC-distribution of product range and turnover of «Kharchovyk» PJSC (Fig. 2.4-2.6) in terms of product groups were formed.

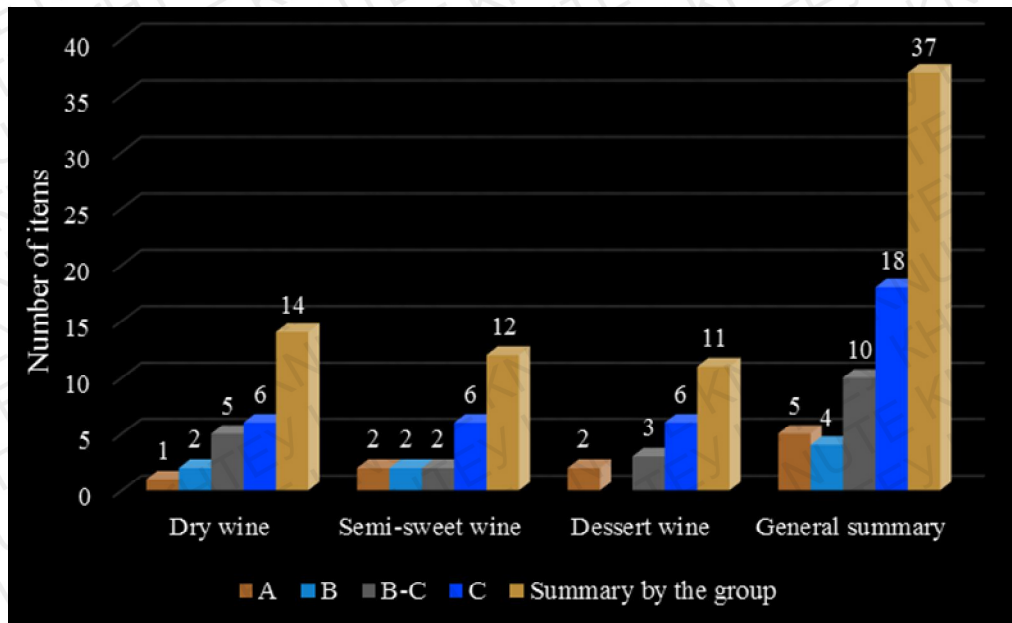


Fig. 2.4. ABC-distribution of product range in terms of commodity groups at «Kharchovyk» PJSC

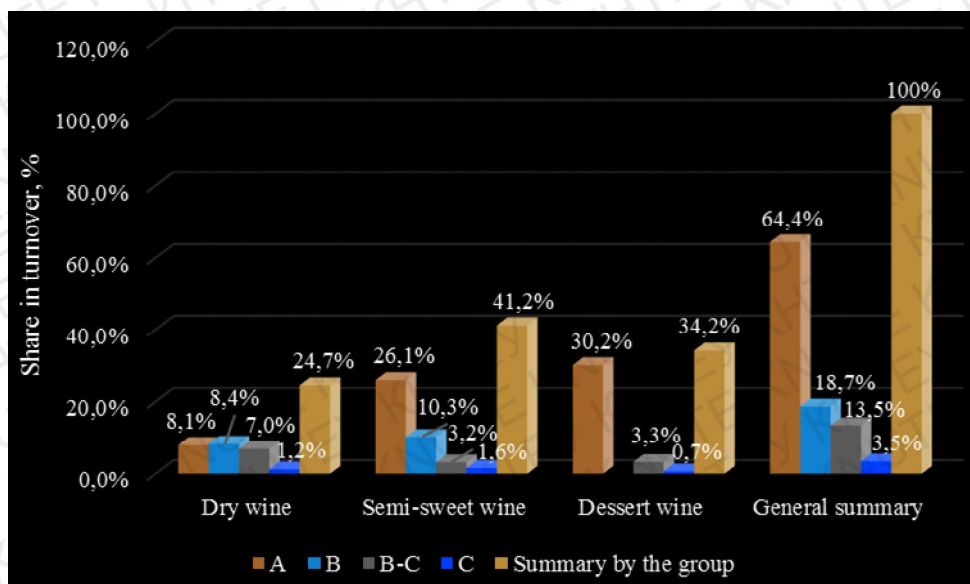


Fig. 2.5. ABC-distribution of turnover in terms of commodity groups at «Kharchovyk» PJSC

So, the algorithm and the basic parameters of ABC-analysis were considered. It is worth pointing out that the most important value of the ABC-



analysis is in dynamics. In addition, there may be goods in the product range of the enterprise that were on sale but not sold during the period under review. Therefore, it is necessary to analyze the quantity of such goods that are in the product groups and an appropriate assessment of the sales efficiency of these groups.

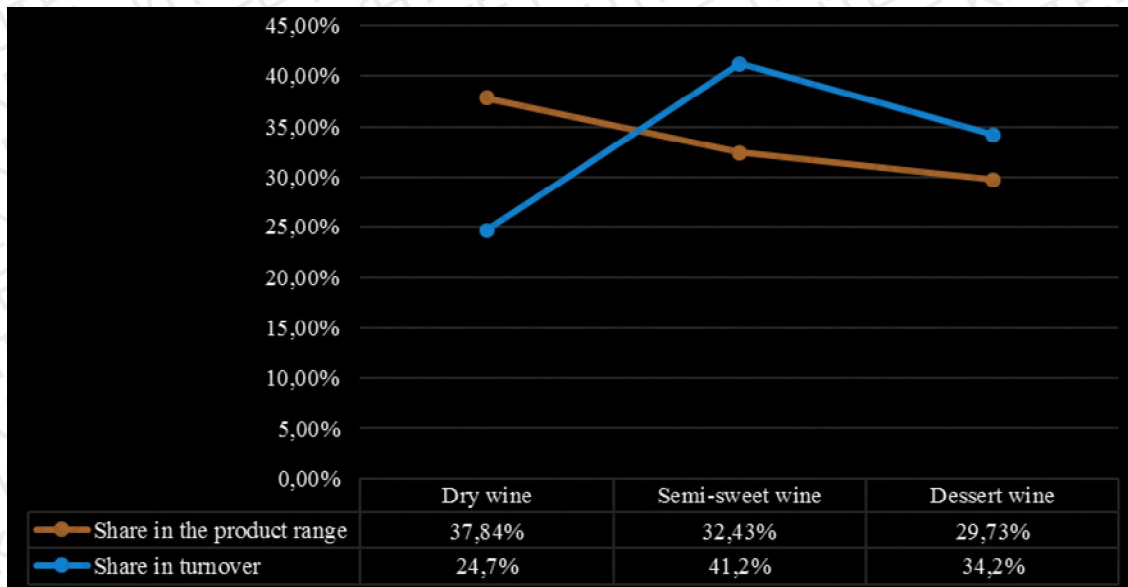


Fig. 2.6. The ratio between the shares in the product range and turnover at «Kharchovyk» PJSC

The data presented in the above tables and figures give an opportunity to conduct a very detailed analysis of the product range structure and develop appropriate solutions for its optimization.

The strategic analysis of the company's product portfolio provides an opportunity to determine that the most relevant for the development of «Kharchovyk» PJSC and the increase of sales is the implementation of the product development strategy. It involves the introduction into the product range new product positions or improvements existing in the modern market. As a result of calculations, the efficiency of changing the product range of the structure in favor of new varieties demanded by the market in the framework of diversification strategy of product range has been proved.

1. For «Kharchovyk» PJSC investment strategy is vital, and more specifically – investment in the development of the product range, expanding new types of wine that are demanded by the market. The company's positions on the



market are average, but there is a risk of its weakening as a result of ignoring the update of the range.

2. Taking into account the stage of market evolution (growth) and the competitive position of «Kharchovyk» PJSC on the wine market of Odessa region (average), the relevance of the growth strategy has been determined. In this case, the strategies for increasing revenue through the introduction new, more popular and profitable varieties of wines into the product range are relevant.

3. In order to meet the key competence regarding the ability to implement the proposals needed by the market, it is recommended to replace the project with the constant product range with the following projects: introduction into the product range new types of wines according to existing sorts (early, medium, wine); introduction into the product range new types of drinks (cognac, vermouth).

4. According to the number of positions, which are included in the group «A» and group «C» product range of «Kharchovyk» PJSC, five positions provide 64.28% of the turnover and 18 positions – only 3.5%. Such a relationship between the number of positions and its contribution to the turnover is the «normal» situation for trading enterprise.

**PART 3**  
**IMPROVING THE PROCESS OF PRODUCT RANGE MANAGEMENT**  
**AT «KHARCHOVYK» PJSC**

**3.1. Substantiation of measures for improving the process of product range management at the enterprise**

On the basis of the research carried out in the previous part of final qualifying paper, a method of matrix functional and strategic analysis of the enterprise that is engaged in the implementation of products under the own TM was proposed. The basis for this methodology is the products portfolio management, in contrast to which the variables «X» – the relative market share and «Y» – the growth rate of the market were modified. It is usually calculated in the classical BCG matrix [29]. Variables were modified to «X» – the share of goods in the formation of aggregate profit and «Y» – the share of goods in the growth of revenue, respectively (Fig. 3.1). This is due to the influence of the following basic conditions:

1. It is quite difficult to calculate numerically and precisely the market share, since there is a high probability of ignored factors.
2. The volume of sales (revenue) of the enterprise is actually the volume of its market in each specific period of time.
3. For each enterprise, the key task is the absolute growth of revenue and profit, even if the market share is reduced.
4. In the conditions of dynamic and not always predictable changes in market demand, a situation may arise when a market share can grow at a drop in revenue and profit.
5. Enterprises, pursuing long-term goals of preserving markets, are often forced to sell products at below cost, that is, a high value for the «market share» indicator for a particular product category in this case will not reflect its high profitability.

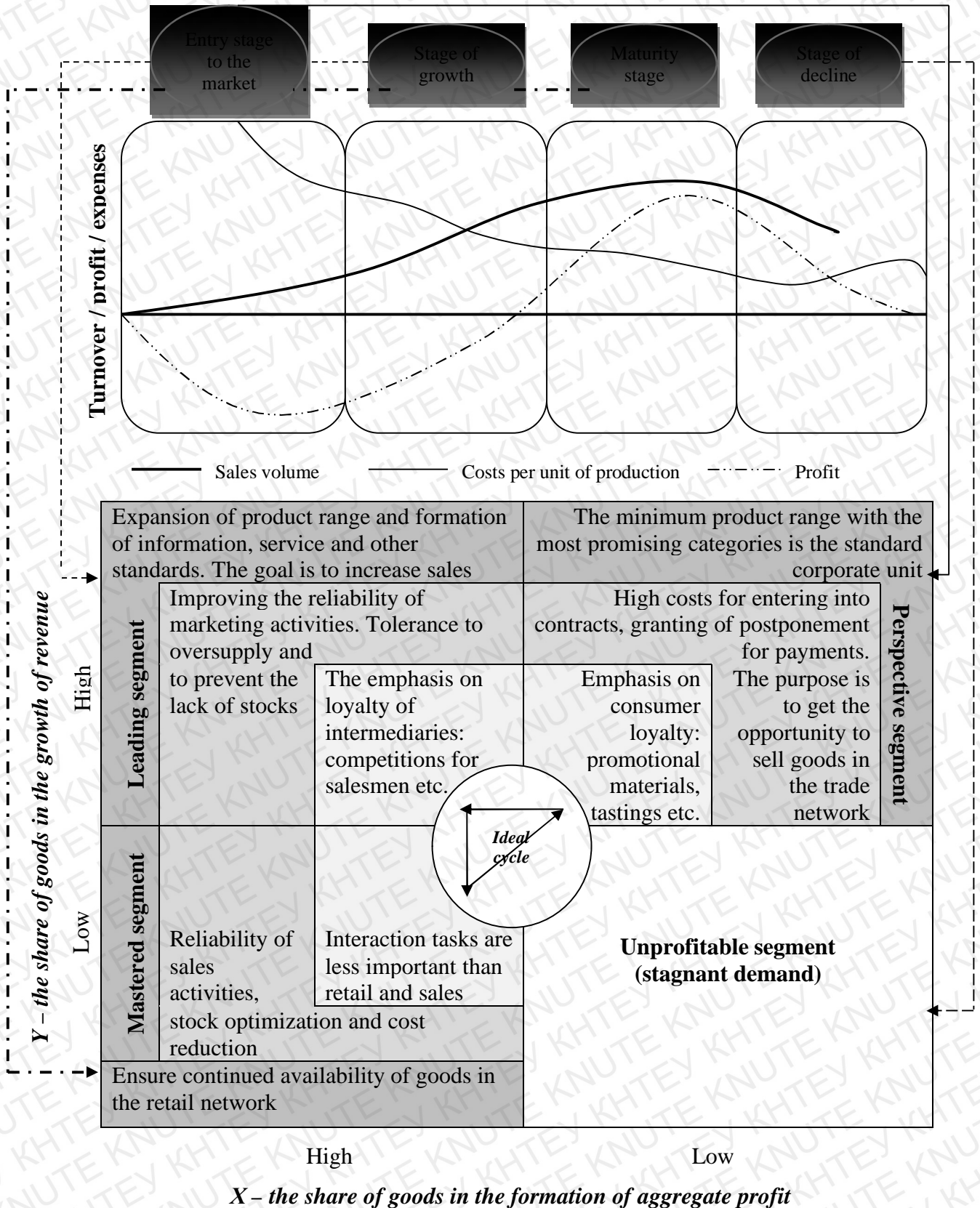


Fig. 3.1. Method of Matrix Functional and Strategic Analysis

Source: compiled and improved by the author using [19; 21; 22; 25; 29] for «Kharchovyk» PJSC



In determining the method of matrix functional and strategic analysis, the following hypotheses were adopted:

- the larger the share of goods in the formation of the company's total profits, the higher the level of its life cycle is a product under the owned trademark (TM) (higher profits show a competitive advantage over costs, the ratio of price and quality of sales);
- the higher the share of goods in the growth of the total turnover of the enterprise, the more significant prospects for the development of this product, that is, the growth of sales indicates the movement of goods in the ascending cycle of the life cycle (the dissatisfied demand in the growing market).

The proposed method involves the division of the commodity «portfolio» into four segments based on the perspective and profitability of sales for specific products. To assign a commodity category to one of the segments is proposed based on the assessment of the location of goods in the coordinate system «X» – the share of goods in the formation of aggregate profits, «Y» – the share of goods in the growth of revenue, which forms four quadrants (Fig. 3.1).

If goods are characterized by high values of both indicators, they fall into the quadrant «Leading segment». This product category requires financial support and promotion (upper left corner, Fig. 3.1). When products are determined by the high value of the «X» and low «Y», they relate to the «Mastered segment» quadrant (lower left corner, Fig. 3.1). Their implementation brings a stable high income, and prospects for growth in sales are minimal. Thus, funds need to be redirected to the development of new and improved existing products under the owned TM, which are in the early stages of the life cycle (formation and growth).

At low values of the index «X» and high «Y» goods fall into the quadrant «Perspective segment» (upper right corner, Fig. 3.1). The latter need to be specially studied to determine whether there are opportunities for certain investments to transfer them into the «Leading segment». If both «X» and «Y» are low, then the goods belong to the «Unprofitable segment» (lower right corner), which brings either a slight income or losses. It is expedient to reduce the volume

of sales of such products if possible, if there are no weighty arguments for their preservation (probable recovery of demand, referring to socially significant products, etc.).

The feature of the proposed method of matrix functional and strategic analysis is that it provides an opportunity to:

- determine the real and prospective level of product competitiveness under the owned TM;
- develop for the enterprise adequate market conditions forecasts of sales of the most profitable product range groups with the allocation of investment priorities;
- compare different alternative strategies for each product category;
- form a visual representation of the product portfolio of the owned TM.

The main advantage of the proposed method of matrix functional and strategic analysis is that it is based on accessible and reliable information. The results of such an assessment can be used to make decisions as to which activities (individual products) should be maintained or used as much as possible in a limited time interval («remove the cream» from the market or change the product portfolio of the owned TM).

Thus, the effectiveness of applying the method is determined by the fact that as a result of its implementation, it becomes possible for the enterprise to plan a balanced structure of the product range distributed in different phases of the life cycle, as well as rationally redistribute financial resources (research, advertising, sales promotion, consumer analysis, etc.) from products that bring a consistently high income (maturity stage) to commodity categories that are implemented in a growing market (market entry and growth).

Practical testing of functional and strategic analysis was carried out for five owned TM of «Kharchovyk» PJSC (Table 3.1, 3.2).

As characteristic of each commodity category (horizontal axis) the parameter «X» – «the share of goods in the formation of aggregate profits» is calculated during the base period (see Table 3.1). Products under the owned TM

are divided into 25 groups – according to the owned TM of the investigated enterprise (from «1» to «5») and by categories (from «a» to «e»). The line and column intersection represents the name of the product group, for example, *a2* – dry wine, which is sold under the «The sun in the glass» TM, *c5* – dessert wine, which is sold under the «Chateau de Wine» TM, etc. The «minus» sign in the value of «X» shows that the sale of this product reduces the aggregate volume of profit by *x*%.

The indicator «X» is proposed to be calculated using the following formula:

$$X_i = \frac{V_i}{V_0} \times 100\% \quad (3.1)$$

where  $V_0$  – the total amount of profit in monetary terms in the base period,  $V_i$  – volume of profit / loss of goods of *i*-th group of products for the same period; at the same time  $V_0 = V_i$ .

Table 3.1

**Share of product groups under owned TM in the total amount of profits earned by «Kharchovyk» PJSC (in % of total profit)**

№	TM	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
		Dry wine	Semi-sweet wine	Dessert wine	Vermouth	Cognac
1.	«Bolgrad» TM	-15,15	21,07	5,56	1,91	24,55
2.	«The sun in the glass» TM	-10,01	-0,18	0,00	-0,92	0,00
3.	«Cardial» TM	-11,34	8,74	20,64	0,44	1,11
4.	«Marelli» TM	-7,87	-0,04	0,00	-0,86	2,59
5.	«Chateau de Wine» TM	-20,96	19,58	26,49	8,65	26,38

As a second characteristic of the product group, the parameter «Y» – «the share of goods in the growth of revenue» was calculated (Table 3.2).

The sign «minus» in this case indicates that revenue on the products under consideration has decreased in comparison with last year by *y*%.



Table 3.2

**Share of product groups under owned TM in the growth rate of the total sales of «Kharchovyk» PJSC (in % of total growth)**

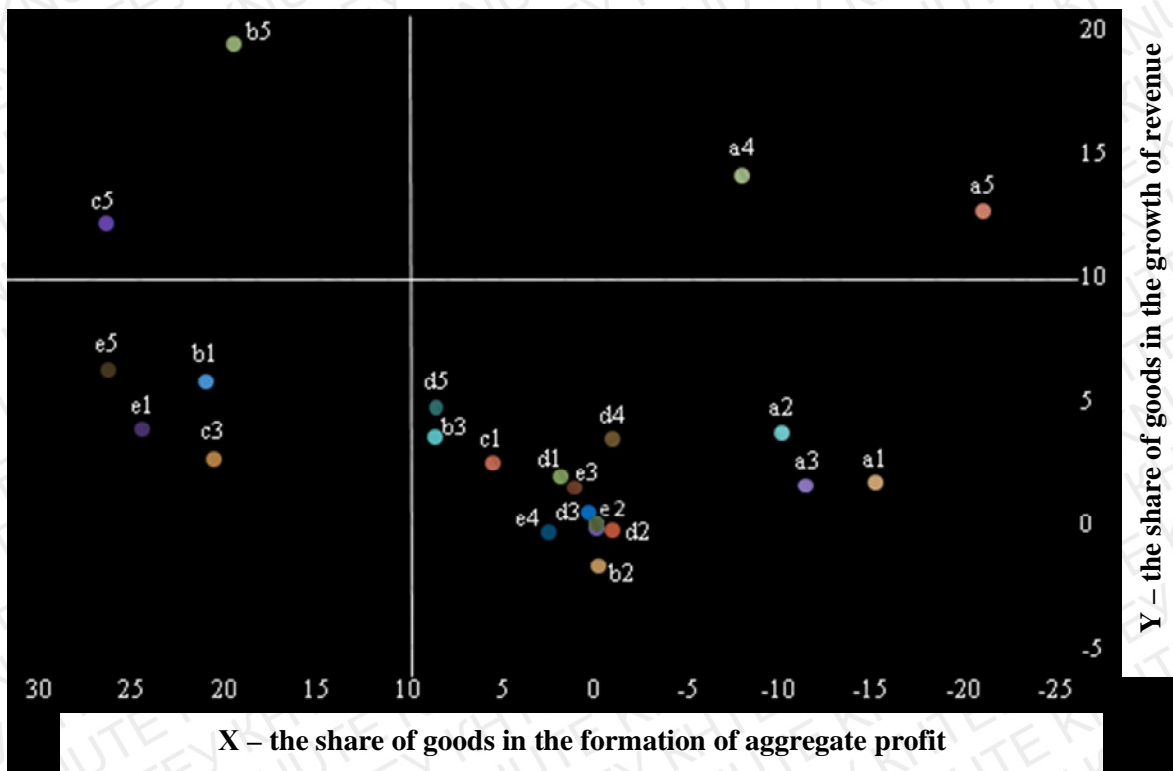
№	TM	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
		Dry wine	Semi-sweet wine	Dessert wine	Vermouth	Cognac
1.	«Bolgrad» TM	1,74	5,76	2,54	1,97	3,85
2.	«The sun in the glass» TM	3,71	-1,66	0,00	-0,24	0,00
3.	«Cardial» TM	1,59	3,55	2,66	0,50	1,51
4.	«Marelli» TM	14,12	-0,11	0,00	3,44	-0,27
5.	«Chateau de Wine» TM	12,68	19,43	12,17	4,76	6,30

Thus, for each category of goods, indicators were obtained that allow to construct a coordinate system (Fig. 3.2), where one of the parameters characterizes the share of each group in the volume of total profit – «X» (Table 3.1), and the other parameter characterizes the share in the rate of change in the volume of total revenue – «Y» (Table 3.2).

As a result of the matrix functional and strategic analysis, it was found that:

- two product groups semi-sweet wine – *b5* and dessert wine – *c5*, which are sold under the «Chateau de Wine» TM are in the «Leading segment»;
- two product groups dry wine – *a4* («Marelli» TM) and *a5* («Chateau de Wine» TM) are classified in the «Prospective segment»;
- four product groups are in the category «Mastered segment», which bring a stable income for reinvestment into new products;
- fourteen product groups are in «Unprofitable segment» (Fig. 3.2, Table 3.3).

It is established that when forming a product line within the framework of the development program of enterprise it is expedient to direct additional efforts on the analysis of the group of goods located in the upper right part of the graph – «Perspective segment».



*Fig. 3.2. Results of matrix functional and strategic analysis of products under owned TM at «Kharchovyk» PJSC*

*Source: composed of functional and strategic analysis materials (X – Table 3.1, Y – Table 3.2)*

This category is characterized by a low level of awareness among buyers, unclear competitive advantages, the strengthening of which requires substantial investment, the implementation of special measures in the establishment of effective relationships with consumers and the development of common criteria for assessing sales and trading activities. For example, standards and quality control of goods and services, breadth of product range, system of trade discounts, delivery terms, payments and etc.

Growth in sales leads to increased revenue. As a result, products from the upper right quadrant «Perspective segment» go into the category «Leading segment». Such products occupy advantageous position and rapidly developing. Thus, semi-sweet wine and dessert wine, which are sold under the «Chateau de Wine» TM, on the one hand, bring the highest amount of revenue and profits, and on the other hand, they require significant resources to finance continued growth in

terms of loyalty formation of end users, increasing the reliability of sales activities (deliveries in the exact time and timely payments).

Table 3.3

**Necessary directions of action at «Kharchovyk» PJSC for each group of goods, based on the results of the analysis according to the proposed method of matrix functional and strategic analysis**

Position in the matrix (Fig. 3.2)	Parameters		Product groups	Directions of actions
	the share of goods in the growth of revenue («Y»)	the share of goods in the formation of aggregate profit («X»)		
Perspective segment – upper right corner	↑	↓	a5, a4	Intensification of efforts in the field of interaction with resellers, development of common criteria for the assessment of sales and trading activities by these product categories
Leading segment – upper left corner	↑	↑	b5, c5	Loyalty formation of end-users, reliability increase of sales measures, optimization of goods turnover and product range policy
Mastered segment – bottom left corner	↓	↑	b1, c3, e1, e5	Reducing costs, maintaining sales volumes at a given level, ensuring uninterrupted availability of products at outlets, consistently high quality goods and services, inventory optimization, product movement, warehouse activities, and payment deadlines
Unprofitable segment – bottom right corner	↓	↓	a1, a2, a3, b2, b3, b4, c1, d1, d2, d3, d4, d5, e3, e4	The withdrawal of the product category from the product portfolio, which requires the maximum possible reduction in production and commercial costs in support of the situation of goods on the market, as well as lower prices for the full sale of inventories

Source: compiled by the author on the basis of analysis in Fig. 3.2



As the market slowdown, products tend to go into the «maturity» stage (lower left quadrant – «Mastered segment»). At this stage, the demand for the product reaches its saturation. Consequently, it is necessary to reduce costs and at the same time maintain sales at a given level (uninterrupted availability of products at points of sale, stable high quality of goods and services, optimization of commodity stocks).

Goods that are in the final stage of the life cycle, as a rule, fall into the category «Unprofitable segment». They are characterized by a decline in sales and a significant reduction in profitability. At the same time, this group includes semi-sweet wine (*b2* – under the «The sun in the glass» TM, *b3* – under the «Cardial» TM, *b4* – under the «Marelli» TM) and dessert wine (*c1* – under «Bolgrad» TM). It follows that enterprises either do not fully use market opportunities, or these product categories are at an early stage of the life cycle, which requires their allocation into a special innovation group and inclusion in a matrix of functional and strategic analysis after deciding about development.

The proposed method of matrix functional and strategic analysis helps to increase the effectiveness of planning, management and control measures and allows to:

- use available and reliable information;
- determine the current and prospective level of competitiveness of the goods;
- efficiently manage costs;
- form an adequate market situation, sales strategy;
- precisely directing the activities of actors to adapt to constantly changing market conditions (forming a target orientation for searching and gaining benefits from new opportunities, for example, with changing demand, lowering purchasing prices, etc.).

In this regard, in the next paragraph it is advisable to estimate commercial risk in the formation of the product range.

### 3.2. Estimation of commercial risk in the product range formation

Nowadays, most decisions of entrepreneurial activity are taken in conditions of uncertainty, when it is necessary to choose the direction of action from several possible options, implementation of which is difficult to predict. An entrepreneur must choose exactly the one that will lead to the highest profit. However, getting a profit entrepreneur is not guaranteed. The remuneration for time spent can be both profit and expenses. Thus, the commercial risk of entrepreneurial activity is the risk of losing any decision.

Commercial risk is a risk that arises in the process of selling goods and services produced or purchased by an entrepreneur.

The main factors that eliminate commercial risk at «Kharchovyk» PJSC include those that make it most meaningful to regulate its value. Depending on the size of the influence of such factors, the level of risk is also applied. That is, the factors that limit the risk, in their opposite sense, are factors that increase the risk. They can be internal and external.

*External factors* are those conditions that the entrepreneur can not change, but must take into account, as they can affect the state of his affairs. External factors include: market equilibrium, supply and demand, competition, legislation, tax system, political situation in the country, etc. [35, P. 67].

The influence on «Kharchovyk» PJSC activity has *internal factors*, which include: costs of production and circulation, sales volume, rate of profit, turnover of goods, quality of goods, works, services, etc.

The activity of an entrepreneur in the field of commercial risk management is aimed at protecting his enterprise from the risks, and also prompts the decision of the main task of entrepreneurship – depending on the situation, choose between several projects the optimal, taking into account the fact that the more profitable the project, the higher the risk. Risk management is a proper understanding of risk. It is important for an entrepreneur to know the true value of the risk that his business is exposed to. Here the promising risk analysis associated with planning

in a market economy is of paramount importance. The forecast is to some extent probable, therefore, the more accurate the analysis of risk in forecasting, the more accurate the assessment of the prospects and correctness of management decisions, and hence more precise engineering of entrepreneurship.

To strengthen the possibility of managing the factors influencing the activity of «Kharchovyk» PJSC is to reduce the level of risk, to determine its level and the future outcome. It is impossible without a sufficiently accurate calculation of costs. Attempts to find ways to increase profits by reducing production costs, especially in conditions of fierce competition, can lead the company to bankruptcy.

The material assets of «Kharchovyk» PJSC have the ability to end, each saving money can become a means of investing in the development of production. In modern conditions it provides the most risk reduction and competitiveness. For this purpose, the company must constantly expand its supply channels and monitor the needs of consumers in order to ensure their own ability to rapidly change the product range.

Therefore, the problem of analysis is complicated in order to more accurately choose the most effective objects of expenditure. In this regard, each product group must be selected not only depending on the size of the demand of customers, but also on the level of expenses and profitability of these types of goods, since the least costly and most profitable products under other equal conditions provide greater profit and financial stability of enterprise.

Profit and its accumulation allows «Kharchovyk» PJSC to reduce or avoid the risks associated with the sale of goods, as well as invest in measures to increase competitiveness and financial sustainability. It is possible to secure competitiveness by introducing innovations, the necessity and expediency of which need to be determined in advance.

Innovations can be carried out in the whole population as a whole, as well as for certain types of goods and services. Therefore, the calculation of income, expenses, profit and reserves for increasing the competitiveness based on the analysis of the rate of return must be carried out for each type. In this regard, the



cost calculation of each product group is not less important than costing. Only a combination of income and expense estimates can provide the enterprise with the information it needs to control, analyze and manage it [1, p. 49].

Reducing the high level of profit rate with the help of its analysis can be done not only to reduce the price, increase the cost of improving the quality of products and services, develop new services and other more favorable conditions for its customers, but also the implementation of conditions for interest, creative activity and responsibility of the workers. Thus, it can be concluded that the management of enterprise's commercial risk is achieved by monitoring the analysis of factors that affect its level, as well as their variation in order to increase profits and reduce the level of risk.

The general assessment of commercial risk in the product range formation at «Kharchovyk» PJSC is solved by the formula:

$$R = \sum_{i=1}^n B_i W_i, \quad (3.2)$$

where  $R$  – level of risk;

$B_i$  – rank of  $i$ -th factor,  $i = 1, \dots, n, n < 10$ ;

$W_i$  – the normalized weight of the  $i$ -th factor in the overall assessment.

$$\sum_{i=1}^n W_i = 1 \quad (3.3)$$

Each risk is described by a certain number of factors (no more than ten). The value of each of them varies according to the level of risk (with the growth of risk), then is normalized. At the same time, each factor on the basis of expert conclusions is assigned its weight, reflecting the proportion of its impact on the overall size of the risk level. The closer the level of risk to 1, the lower the risk, the closer it is to  $n$  (for 10 factors  $n = 10$ ), so it is higher.

Objective risk criteria for «Kharchovyk» PJSC are stable and do not depend on the actions of business entities, they should be taken into account as necessary risk costs, and in some cases it is necessary to adapt to certain conditions of

uncertainty. However, in certain cases, some of the risk factors fall (within certain limits) under marketing influence. These include:

- situation in the busy niche of the market;
- the state of the orders portfolio;
- market share occupied;
- balance between production and sales;
- production, financial, marketing and other economic factors;
- competitiveness of the enterprise, etc.

Along with the definition of the level of risk it is important to establish areas of risk. The risk area is the limits in which the risk does not exceed the specified values that characterize the level of risk, but does not exceed its inadmissible level. On a ten-point scale, it can be identified such areas of risk (Table 3.4).

*Table 3.4*

#### **Zones of risk by a ten-point scale**

<b>Limit of risk areas (R)</b>	<b>0</b>	<b>0,1 – 2,5</b>	<b>2,6 – 5,0</b>	<b>5,1 – 7,5</b>	<b>7,6 – 10</b>
Characteristics of risk zones	No risk	Insignificant	Increased	Critical	Invalid

*Source: compiled by the author*

An average expert assessment of the risk of product range formation at «Kharchovyk» PJSC is  $R = 3.1$ . It indicates an increased risk. In this case, management should choose between high risk and probably large profits from the implementation of a fundamentally new product.

«Kharchovyk» PJSC activity, as well as any other business entity, is associated with the risk inherent in entrepreneurship.

On the basis of expert conclusions, the risk factors for the product range formation at «Kharchovyk» PJSC and its implementation on the market were evaluated. It is necessary to assess the general risk of the danger of non-

implementation of the goods. The calculation of the level of risk is given in Table 3.5.

Table 3.5

**Estimation of commercial risk of the product range formation at  
«Kharchovyk» PJSC**

№	The risk factor	Business condition estimation	Rank of factor ( $B_i$ )	Weight of factor ( $W_i$ )	$B_i W_i$
1.	Market capacity	Great	2	0,08	0,16
2.	Dynamics of market development	Strong fluctuations, growth with slowing down	2	0,09	0,18
3.	Brands	Predominance of well-known brands	4	0,2	0,8
4.	Competitiveness of the product	High	1	0,15	0,15
5.	Intensity of competition	High	4	0,3	1,2
6.	Production and financial factors	Sufficient	3	0,01	0,03
7.	Reliability of trading partners	High	4	0,09	0,36
8.	Sales of goods from previous seasons	Successful	2	0,01	0,02
9.	The quality of the marketing service	Successful	3	0,06	0,18
10.	Force major Factors	High	2	0,01	0,02
TOTAL				1	3,1

Source: compiled by the author on the basis of analysis

The development of a commercial risk management strategy of «Kharchovyk» PJSC should be based on certain principles:

1. *the principle of systemicity*, which requires the systematic (integrated) approach to study assessment and implementation of risk control measures, as well as the need to take into account the risk factor in the development of other functional management strategies of the enterprise;



2. *the principle of justification*, which requires the necessity of a thorough justification of the measures and actions carried out towards risk management;
3. *the principle of economics*, which requires the assessment of the cost estimates for risk management and their comparison with possible losses of the enterprise in case of risk events;
4. *the principle of consistency*, which stipulates the need to comply with the risk manager in developing and implementing a risk management strategy for a certain sequence of action for the most effective conduct;
5. *the principle of flexibility of commercial risk management strategy*, which provides for the possibility and necessity of continuous operational correction of the previously developed risk management strategy and tactics in connection with the constant change in the factors that determine the risks of the enterprise. Therefore, the risk management strategy should be designed in such a way that, if necessary, it could make the necessary adjustments.

The development of a commercial risk management strategy at «Kharchovyk» PJSC provides according the following sequence of actions:

- I. stage – it is necessary to identify the risks inherent in the activity of «Kharchovyk» PJSC or its separate business operations, that is, to determine the list of systematic and specific risks with which the studied enterprise is faced. This work should be carried out by specialists of the company by identifying possible losses and obstacles that may occur in the course of carrying out each type of business operations of the enterprise or the enterprise as a whole.
- II. stage – the collection of information about the identified types of risk and the nature of their manifestation at «Kharchovyk» PJSC or similar enterprises is carried out. The quality of the information provision of the risk management process is very important, as it enables us to accurately assess the level of risk and its financial implications. Required information is obtained from both internal and external sources.

The sources of *internal information* about the level of commercial risk at «Kharchovyk» PJSC and its specific business operations are:

- 1) forms of accounting and statistical reporting;
- 2) primary documents directly related to the conduct of certain business transactions – acts of inventory acceptance, contracts and agreements concluded, claims, exhibits, goods and transport documents, etc.;
- 3) primary accounting documents, logs, warrants and negotiable information from individual accounts.

*The external information* necessary to study the risk of the company includes:

- 1) legislative and regulatory documents regulating the activities of the companies and its counterparties;
- 2) official information about the level of inflation, the size of changes in prices for goods and services, the level of the discount rate of the National Bank of Ukraine;
- 3) results of monitoring the markets in which the enterprise operate (consumer, financial, stock, foreign exchange labor market, means of production, etc.);
- 4) information about the efficiency of the trading sector as a whole and individual analogue companies and competitors,
- 5) information about the level of loss-making and stability of enterprises (number of bankruptcies);
- 6) information about the conditions of external risk insurance and the development of the insurance market as a whole;
- 7) information about arbitration practice on the resolution of commercial disputes, etc.

III. stage – an assessment of the certain types level of risk and riskiness of «Kharchovyk» PJSC activity (or economic agreement) as a whole should be carried out. The assessment of the risk level can be carried out by various methods: statistical, expert, calculation and analytical (sensitivity or

computer simulation), etc.

IV. stage – an estimation of possible financial losses of «Kharchovyk» PJSC in the risk event, which is a manifestation of a particular type of risk, should be carried out. The financial losses that are expected to be can be estimated in absolute terms (in cash or in kind) or relative to some indicator of the economic activity of the enterprise (income, profit, expenses, assets or capital).

V. stage – risk examination is conducted. During its conduct it is necessary to compare between each other:

1) the level of risk and expected rate of return, and compare it with the ratio between the risk and return on the activity that actually occurred or is the average market indicator;

2) the size of financial losses that may be due to risk events, with the company's financial capabilities.

The result of this work should be the answer about the appropriateness of such a level of commercial risk for «Kharchovyk» PJSC.

There are three options for assessing the commercial risk at «Kharchovyk» PJSC:

a) when recognizing risk, it is absolutely expedient to carry out an operation or activity of the enterprise to which it is inherent in a scenario that has actually been developed or planned. In this case, the usual (typical for this enterprise) measures to control and finance the risk should be conducted.

b) when recognizing risk, it is absolutely inappropriate to engage in an enterprise that is associated with this risk (the project for a particular business transaction is rejected).

c) if it is not possible to evaluate the expediency of risk (doubtful expediency), it should be proceeding to the next sixth stage of work on the development of a risk management strategy.

VI. stage – development of risk control and financing measures. Risk management practices cover a variety of approaches to minimizing the



effects of a company's business.

In general, they are divided into two large groups:

- organizational or risk-control methods;
- economic or risk financing methods.

After defining a certain list of measures, a reassessment of the appropriateness of the risk is carried out, determining its final attitude to the type of activity or transaction.

VII. stage – begin to implement the planned risk management measures in practice. In the course of this work it is also necessary to periodically repeat the individual stages of the risk assessment process for the operational adjustment of the previously developed strategy.

In table 3.6 is presented an assessment of the expediency of the commercial risk to form product range at «Kharchovyk» PJSC. It is calculated on the basis of expert assessments and real practice of competitors.

*Table 3.6*

**Estimation of commercial risk expediency to form product range  
at «Kharchovyk» PJSC**

<b>№</b>	<b>Indicator</b>	<b>Value</b>
1.	Expected level of return	333347,3
2.	Expected level of risk	2,7
3.	Expected amount of financial losses on the condition of commercial risk	356681,6
4.	Probability of risk	31
5.	Probability of non-occurrence of risk	69

Consequently, on the basis of the conducted research, it can be concluded that the probability of obtaining by «Kharchovyk» PJSC profit exceeds the probability of commercial risk. That is, it can be assumed that the existing level of commercial risk at the enterprise is appropriate.

It should be noted that in order to reduce the commercial risk of the investigated enterprise, it is necessary to prevent:

- reduction of sales volumes as a result of falling demand for goods sold by the enterprise, squeezing out its competing goods, imposing restrictions on sales;
- increase the purchase price of goods in the process of implementing an entrepreneurial project;
- unpredictable reduction of procurement volumes in comparison with planned ones, which reduces the scale of the whole operation and increases expenses per unit volume of goods sold (at the expense of conditionally constant expenses);
- loss of goods;
- loss of goods quality in the process of circulation (transportation, storage), which leads to a decrease in its price;
- increase of expenses of circulation in comparison with the planned as a result of payment of fines, unforeseen duties and deductions, which leads to a decrease in profit of the enterprise.

On the basis of the research carried out in the previous part, a method of matrix functional and strategic analysis of the enterprise that is engaged in the implementation of products under the own TM was proposed. The basis for this methodology is the products portfolio management, in contrast to which the variables «X» – the relative market share and «Y» – the growth rate of the market were modified. It is usually calculated in the classical BCG matrix. Variables were modified to «X» – the share of goods in the formation of aggregate profit and «Y» – the share of goods in the growth of revenue, respectively.

As a result of the matrix functional and strategic analysis, it was found that:

- two product groups semi-sweet wine – *b5* and dessert wine – *c5*, which are sold under the «Chateau de Wine» TM are in the «Leading segment»;
- two product groups dry wine – *a4* («Marelli» TM) and *a5* («Chateau de Wine» TM) are classified in the «Prospective segment»;
- four product groups are in the category «Mastered segment», which bring a stable income for reinvestment into new products;
- fourteen product groups are in «Unprofitable segment».

The effectiveness of applying the method is determined by the fact that as a result of its implementation, it becomes possible for the enterprise to plan a balanced structure of the product range distributed in different phases of the life cycle, as well as rationally redistribute financial resources (research, advertising, sales promotion, consumer analysis, etc.) from products that bring a consistently high income (maturity stage) to commodity categories that are implemented in a growing market (market entry and growth).

The general assessment of commercial risk in the product range formation at «Kharchovyk» PJSC is solved by the formula in which each risk is described by a certain number of factors (no more than ten). The value of each of them varies according to the level of risk (with the growth of risk), then is normalized. At the same time, each factor on the basis of expert conclusions is assigned its weight, reflecting the proportion of its impact on the overall size of the risk level.

Objective risk criteria for «Kharchovyk» PJSC are stable and do not depend on the actions of business entities, they should be taken into account as necessary risk costs, and in some cases it is necessary to adapt to certain conditions of uncertainty. However, in certain cases, some of the risk factors fall (within certain limits) under marketing influence.

An average expert assessment of the risk of product range formation at «Kharchovyk» PJSC is  $R = 3.1$ . It indicates an increased risk. In this case, management should choose between high risk and probably large profits from the implementation of a fundamentally new product.

The development of a commercial risk management strategy of «Kharchovyk» PJSC should be based on certain principles: the principle of systemicity; the principle of justification; the principle of economics; the principle of consistency; the principle of flexibility of commercial risk management strategy.

On the basis of the conducted research, it can be concluded that the probability of obtaining by «Kharchovyk» PJSC profit exceeds the probability of commercial risk. That is, it can be assumed that the existing level of commercial risk at the enterprise is appropriate.



## CONCLUSIONS AND PROPOSITIONS

As a result of the conducted research the following conclusions and recommendations should be done to improve the process of product range management at «Kharchovyk» PJSC:

1. The main stages of planning and approaches to the formation of the product range at the enterprise were identify. In order to prevent the incorrect essence interpretation of the forming process of product range, the processes of product range formation and planning, which are considered in the professional literature as identical, are considered as partial, subordinate to the general process of policy formation. Product range policy as a system vision of the product range development in the future determines qualitative and quantitative benchmarks for the development of product range plans and the formation of the product range on their basis. From these positions, it is believed that the planning and formation of the product range can only be considered in the context of the implementation of a product range, and their inherent methods constitute a methodical tool for the formation of product range policy.

2. Qualitative and quantitate indicators to assess product range of the enterprise were observed. Quantitate indicators consist of coefficient of range width; coefficient of range depth; coefficient of range fullness (saturation); structure of product range. Qualitative indicators consist of coefficient of product range harmony; coefficient of product range stability; coefficient of product range renewal; coefficient of demand compliance; coefficient of rationality.

3. The formation process of product range management at «Kharchovyk» PJSC was analyzed. As a result of investment strategy «Kharchovyk» PJSC positions on the market are average, but there is a risk of its weakening as a result of ignoring the update of the range. Taking into account the stage of market evolution (growth) and the competitive position of «Kharchovyk» PJSC on the wine market of Odessa region (average), the relevance of the growth strategy has been determined. In this

case, the strategies for increasing revenue through the introduction new, more popular and profitable varieties of wines into the product range are relevant.

4. Economic efficiency of product range management at «Kharchovyk» PJSC was identified and assessed. Using the rule of Pareto 4 product groups of «Kharchovyk» PJSC were created: *the first group* provides 64% of the turnover (the list of items completes the Wine «Peach» white); *the second group* provides 16% of the turnover (the list of items completes the Wine «Cabernet» PREMIUM); *the third group* provides another 16% of the turnover (the list of positions completes the Wine «Merlot Classic»); *the fourth group* provides 4% of the remaining turnover. According to the number of positions, which are included in the group «A» and group «C» product range of «Kharchovyk» PJSC, five positions provide 64.28% of the turnover and 18 positions – only 3.5%. Such a relationship between the number of positions and its contribution to the turnover is the «normal» situation for trading enterprise.

5. Measures for improving the process of product range management at «Kharchovyk» PJSC were substantiated. Method of matrix functional and strategic analysis of the enterprise that is engaged in the implementation of products under the own TM was proposed on the basis of classical BCG matrix. Variables were modified to «X» – the share of goods in the formation of aggregate profit and «Y» – the share of goods in the growth of revenue, respectively. As a result of the matrix functional and strategic analysis, it was found that: two product groups semi-sweet wine and dessert wine, which are sold under the «Chateau de Wine» TM are in the «Leading segment»; two product groups dry wine «Marelli» TM and «Chateau de Wine» TM are classified in the «Prospective segment»; four product groups are in the category «Mastered segment», which bring a stable income for reinvestment into new products; fourteen product groups are in «Unprofitable segment». The effectiveness of applying the method is determined by the fact that as a result of its implementation, it becomes possible for the enterprise to plan a balanced structure of the product range distributed in different phases of the life cycle, as well as rationally redistribute financial resources (research, advertising,

sales promotion, consumer analysis, etc.) from products that bring a consistently high income (maturity stage) to commodity categories that are implemented in a growing market (market entry and growth).

6. Commercial risk in the product range formation for «Kharchovyk» PJSC was estimated. Objective risk criteria for «Kharchovyk» PJSC are stable and do not depend on the actions of business entities, they should be taken into account as necessary risk costs, and in some cases it is necessary to adapt to certain conditions of uncertainty. However, in certain cases, some of the risk factors fall (within certain limits) under marketing influence. An average expert assessment of the risk of product range formation at «Kharchovyk» PJSC is  $R = 3.1$ . It indicates an increased risk. In this case, management should choose between high risk and probably large profits from the implementation of a fundamentally new product.



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**APPENDICE A**

## APPENDIXE B

### Balance sheet (statement of financial position)

Assets	Line code	2015	2016	2017
1	2	3	4	5
<b>I. Non-current assets</b>				
Intangible assets:	1000	1727	794	18
initial value	1001	1893	1893	1893
accumulated depreciation	1002	166	1099	1875
Incomplete capital investment	1005	0	0	7412
Fixed assets:	1010	13600	15268	18138
initial value	1011	27116	30827	36014
wear and tear	1012	13516	15559	17876
Investment Property:	1015	0	0	0
initial value	1016	0	0	0
wear and tear	1017	0	0	0
Long-term biological assets:	1020	0	0	0
initial value	1021	0	0	0
accumulated depreciation	1022	0	0	0
Long-term financial investments: which are accounted using the equity method of other enterprises	1030	0	0	0
other financial investments	1035	0	0	0
Long-term receivables	1040	0	0	0
Deferred tax assets	1045	0	0	0
Goodwill	1050	0	0	0
Deferred aquaculture expenses	1060	0	0	0
Remaining funds in centralized insurance reserve funds	1065	0	0	0
Other non-current assets	1090	0	0	0
<b>Total for Section I</b>	<b>1095</b>	<b>15327</b>	<b>16062</b>	<b>25568</b>
<b>II. Current assets</b>				
Stocks	1100	40969	48248	72279
Inventories	1101	6070	15965	23108
Unfinished production	1102	22142	23045	35387
Final product	1103	6158	6017	1982
Goods	1104	6599	3221	11802
Current biological assets	1110	0	0	0
Deposits of reinsurance	1115	0	0	0
Promissory notes received	1120	0	0	0
Accounts receivable for products, goods, works, services	1125	164423	163095	55604
Accounts receivable by settlement: on advance payments	1130	0	0	0



with budget	1135	5860	6723	12260
including income tax	1136	0	0	0
from accrued income	1140	0	0	0
from internal settlements	1145	0	0	0
Other Current Accounts Receivable	1155	54522	37258	28326
Current financial investments	1160	0	0	0
Money and their equivalents	1165	9454	365	174
Cash	1166	39	0	0
Bank accounts	1167	9415	365	174
Costs of future periods	1170	486	517	509
The share of a reinsurer in insurance reserves	1180	0	0	0
including: reserves of long-term liabilities	1181	0	0	0
provisions for losses or provisions for due payments	1182	0	0	0
reserves of unearned premiums	1183	0	0	0
other insurance reserves	1184	0	0	0
Other current assets	1190	24	2211	3906
Total for Section II	1195	275738	258417	173058
<b>III. Non-current assets held for sale and disposal groups</b>	1200	0	0	0
<b>Balance</b>	1300	291065	274479	198626
<b>Passive</b>	<b>Line code</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>I. Equity</b>				
Registered (share) capital	1400	53	53	53
Contributions to unregistered authorized capital	1401	0	0	0
Capital in surplus	1405	0	0	0
Additional capital	1410	11984	11984	11984
Emission Income	1411	0	0	0
Accumulated exchange rate differences	1412	0	0	0
Reserve capital	1415	54	54	54
Retained earnings (uncovered loss)	1420	15391	19354	21919
Unpaid capital	1425	(0)	(0)	(0)
Capital withdrawn	1430	(0)	(0)	(0)
Capital withdrawn	1435	0	0	0
Total for Section I	1495	27482	31445	34010
<b>II. Long-term commitments and collateral</b>				
Deferred tax liabilities	1500	0	0	0
Pension obligations	1505	0	0	0
Long-term bank credits	1510	0	0	0
Other long-term liabilities	1515	16799	16495	16495

Long-term security	1520	0	0	0
Long-term maintenance of staff costs	1521	0	0	0
Targeted financing	1525	0	0	0
Charity	1526	0	0	0
Insurance reserves, including:	1530	0	0	0
reserve of long-term liabilities; (at the beginning of the reporting period)	1531	0	0	0
loss reserve or due allowance; (at the beginning of the reporting period)	1532	0	0	0
reserve of unearned premiums; (at the beginning of the reporting period)	1533	0	0	0
other insurance reserves; (at the beginning of the reporting period)	1534	0	0	0
Investment contracts	1535	0	0	0
Prize fund	1540	0	0	0
Reserve for jackpot payment	1545	0	0	0
Total for Section II	1595	16799	16495	16495
<b>III. Current liabilities and security</b>				
Short-term bank credits	1600	0	39470	0
Promissory notes issued	1605	0	0	0
Current payables: for long-term obligations	1610	0	0	0
for goods, work, services	1615	198392	127586	103299
according to calculations with the budget	1620	344	23	43
including for income tax	1621	285	2	0
on insurance calculations	1625	18	0	0
on payroll calculations	1630	295	0	0
on receipt of advances	1635	0	0	0
according to the calculations with the participants	1640	2	2	2
from internal settlements	1645	0	0	0
for insurance activity	1650	0	0	0
Current provision	1660	428	457	916
Future revenues	1665	0	0	0
Deferred commission income from reinsurers	1670	0	0	0
Other current commitments	1690	47305	59001	43861
Total for Section III	1695	246784	226539	148121
<b>IV. Liabilities related to non-current assets held for sale and disposal groups</b>	1700	0	0	0
<b>V. Net asset value of non-state pension fund</b>	1800	0	0	0
<b>Balance</b>		291065	274479	198626

## APPENDIXE C

### Financial Statement (Consolidated Income Statement)

#### I. Financial results

Article	Line code	2015	2016	2017
Net income from sales of goods (goods, works, services)	2000	231162	388977	325273
Net earned insurance premiums	2010	0	0	0
Awards signed, gross amount	2011	0	0	0
Awards transferred to reinsurance	2012	0	0	0
Change in reserve of unearned premiums, gross amount	2013	0	0	0
Change in the share of reinsurers in the reserve of unearned premiums	2014	0	0	0
Cost of sold products (goods, works, services)	2050	( 162839 )	( 262140 )	( 237524 )
Net losses incurred on insurance payments	2070	( 0 )	( 0 )	( 0 )
Gross: profit	2090	68323	126837	87749
loss	2095	( 0 )	( 0 )	( 0 )
Income (expense) from changes in long-term liability provisions	2105	0	0	0
Income (expenses) from changes in other insurance reserves	2110	0	0	0
Change in other insurance reserves, gross amount	2111	0	0	0
Change in the share of reinsurers in other insurance reserves	2112	0	0	0
Other operating income	2120	41654	37716	4855
Income from changes in the value of assets measured at fair value	2121	0	0	0
Income from initial recognition of biological assets and agricultural products	2122	0	0	0
Administrative expenses	2130	( 4664 )	( 3483 )	( 3719 )
Selling expenses	2150	( 55758 )	( 110310 )	( 76365 )
Other operating expenses	2180	( 42622 )	( 42185 )	( 6237 )
Cost of changes in the value of assets that are measured at fair value	2181	( 0 )	( 0 )	( 0 )
Costs from the initial recognition of biological assets and agricultural products	2182	( 0 )	( 0 )	( 0 )
Financial result from operating activities: profit	2190	6933	8575	6283
loss	2195	( 0 )	( 0 )	( 0 )
Income from equity participation	2200	0	0	0
Other financial income	2220	0	0	0
Other income	2240	0	0	0



Income from charity	2241	0	0	0
Financial expenses	2250	( 1002 )	( 3695 )	( 3125 )
Losses from equity participation	2255	( 0 )	( 0 )	( 0 )
Other expenses	2270	( 15 )	( 13 )	( 0 )
Profit (loss) from the influence of inflation on monetary items	2275	0	0	0
Financial results before tax: profit	2290	5916	4867	3158
loss	2295	( 0 )	( 0 )	( 0 )
Income from income tax	2300	-1130	-904	-593
Profit (loss) from discontinued operations after tax	2305	0	0	0
Net financial result: profit	2350	4786	3963	2565
loss	2355	( 0 )	( 0 )	( 0 )

## II. Comprehensive income

Article	Line code	2015	2016	2017
Revaluation (subtraction) of non-current assets	2400	0	0	0
Revaluation (subtraction) of financial instruments	2405	0	0	0
Accumulated exchange rate differences	2410	0	0	0
Share of other aggregate income of associates and joint ventures	2415	0	0	0
Another cumulative income	2445	0	0	0
Other comprehensive income before tax	2450	0	0	0
Income tax linked to other comprehensive income	2455	0	0	0
Other comprehensive income after tax	2460	0	0	0
Total revenue (amount of lines 2350, 2355 and 2460)	2465	4786	3963	2565

## III. Elements of operating expenses

Article	Line code	2015	2016	2017
Material costs	2500	95696	146695	202423
Salary expenses	2505	6518	7732	12829
Deductions for social events	2510	1023	1657	2131
Amortization	2515	1831	3390	3481
Other operating expenses	2520	59077	111939	80964
Total	2550	164145	271413	301828