

**JEL Classification:** M31; D04; D12

**DOI:** https://doi.org/10.31521/modecon.V27(2021)-17

**Petrykiva Olga**, Ph.D. (Economics), Associate Professor of the Department of Finance And Credit, Kharkiv National University of Civil Engineering and Architecture, Kharkiv, Ukraine

**ORCID ID:** 0000-0002-7169-8667

**e-mail:** gnhoc1902@gmail.com

### **Product range as an object of management in an enterprise**

**Abstract. Introduction.** The article conducts research and defines the essence of the product range of an enterprise as an object of management. Analysis of the assortment policy of an enterprise makes it possible to determine that the most relevant for the development of a modern enterprise and an increase in sales is the application of a product development strategy, which provides for the introduction of new items into the assortment or improving existing ones on the market today.

**Purpose.** The purpose of the article is to study the product range as an object of management in a modern enterprise.

**Results.** The concept of "product range" is considered, and the main directions in the field of assortment formation are presented. The paper notes that the assortment concept is manifested in the form of a system of indicators that characterize the possibilities of optimal development of the product range of this type of goods and provides a list of these indicators. The scheme of typology of assortment management methods is constructed and according to it, strategic and tactical methods of assortment management are analyzed.

**Conclusions.** The article analyzes the concept of product range, considers the formation of the range as an activity to compile a set of products that can meet real or projected needs. It is concluded that the process of effective range management in modern conditions goes beyond the issues of production and sales and determines the need for an integrated approach to the management of an enterprise as a whole.

**Keywords:** enterprise; management; product range.

УДК 658.628.001.26

**Петрикiва О. С.**, кандидат економічних наук, доцент кафедри фінансів та кредиту, Харківський національний університет будівництва та архітектури, м. Харків, Україна

### **Товарний асортимент як об'єкт управління на підприємстві**

**Анотація.** У статті проведено дослідження та визначено сутність товарного асортименту як об'єкту управління на сучасному підприємстві, а також проблеми підвищення ефективності асортиментної політики організації. В роботі розглянуто поняття «товарний асортимент» та представлені основні напрями в області формування асортименту. Визначено формування асортименту як діяльності по складанню набору товарів, що дозволяє задовольнити реальні або прогнозовані потреби, а також досягти цілей, визначених керівництвом організації. Також підсумовано, що товарний асортимент – це один з найважливіших чинників вибору покупця. У роботі зазначено, що асортиментна концепція виявляється у вигляді системи показників, що характеризують можливості оптимального розвитку виробничого асортименту даного виду товарів та надано перелік цих показників. У ході проведеного дослідження встановлено, що управління асортиментом передбачає координацію взаємозалежних видів діяльності (науково-технічної та проєктної), комплексного дослідження ринку, організації збуту, сервісу, реклами, стимулювання попиту. Зазначено, що основна мета організації в галузі управління асортиментом полягає в формуванні реального або прогнозованого асортименту максимально наближається до раціонального, для задоволення якомога більшої кількості постійно зростаючих різноманітних потреб і забезпечення вищих темпів розвитку підприємства в порівнянні з конкурентами. У даній роботі побудована схема типології методів управління асортиментом та згідно з нею проаналізовано стратегічні та тактичні методи управління асортиментом підприємства. Отже, у статті зроблено аналіз поняття товарний асортимент, розглянуто формування асортименту як діяльність по складанню набору товарів, що свою чергу дозволяє задовольнити реальні або прогнозовані потреби. У результаті зроблено висновок, що процес ефективного управління асортиментом в сучасних умовах виходить за рамки питань виробництва та реалізації продукції і визначає необхідність застосування комплексного підходу до управління діяльністю підприємства в цілому.

**Ключові слова:** підприємство, управління, товарний асортимент.

**Formulation of the problem.** In the context of tougher competition, the problems of increasing the efficiency of the assortment policy of an organization are of great interest, since in a competitive environment only companies that are most competent in assortment policy issues, possess the methods and tools for its

implementation and, therefore, can manage it as efficiently as possible, have an advantage. At the present stage, a very important issue is the development of a strategic vision of an enterprise at all levels, as well as methodological and theoretical problems of marketing

Стаття надійшла до редакції: 11.05.2021

Received: 11 May 2021

components and its effective functioning, taking into account the product range and product range.

The analysis of the assortment policy of an enterprise provides an opportunity to determine that the most relevant for the development of a modern enterprise and increase sales is the application of product development strategy, which involves introducing new assortment items or improving existing ones in today's market.

#### **Analysis of recent research and publications.**

Exploring the concept of product range and product range management, it should be noted that the study of these issues, engaged many domestic and foreign scientists, such as Azaryan O. M., Orlov O. O. [1], Starostina A. A. [14], Chukhray N. I. [2], Fedoryak R. M., Sharko V. V., Shcherbak V. G., Kotler F. [3], Porter M. [5], and others. But among scientists, there is not a single opinion on the definition of these concepts.

Chukhray N. I. [2] in the works notes that the product range is a dynamic set of nomenclature of items (brands, models) of products that are in potential demand in the market. Orlov O. O. believes that the product range characterizes the ratio of specific weight in total output [1]. Kotler F. [3] interprets the product range as "the totality of all assortment groups of goods and product units offered to buyers by a particular seller." Therefore, the assortment group of goods can be considered as a set of assortment items of goods according to the functional purpose.

**Formulation of research goals.** The purpose of the article is to study the product range as an object of management in a modern enterprise.

**Outline of the main research material.** The decisions made by manufacturers and sellers of goods to manage their assortment have a huge impact not only on their product policy but also on the results of all marketing activities of companies and organizations since the products they offer to determine the choice of a manufacturer or seller by buyers and affect the entire process of consumer behavior.

Retail trade is one of the promising and rapidly developing sectors of our country's economy since its effective functioning is one of the sources of sustainable socio-economic development of territories. In turn, in the conditions of market relations, stable functioning of trade enterprises is possible only through the effective satisfaction of consumer demand with a high culture of service. Effective product mix management requires a clear understanding of the customer decision-making process and achieving a certain balance between the benefits and costs of companies when changing product mix. In any case, the product range is one of the most important factors in the choice of the customer.

The formation of the assortment is preceded by the development of the assortment concept by the enterprise. The assortment concept is a purposeful construction of the optimal assortment structure of the product offer, which is based on the consumer

requirements of certain groups (market segments) and the need to ensure the most efficient use of resources by an enterprise, allowing it to produce products with low production costs [1]. The purpose of assortment concepts is to orient the organization towards the release (or sale) of goods that are most consistent with the structure and characteristics of the demand of the target market.

The assortment concept is expressed in the form of a system of indicators characterizing the possibilities of optimal development of the production assortment of a given type of goods.

These indicators include:

- the degree of diversity of types and varieties of goods;
- the level of the ratio of prices for goods of a certain type;
- frequency of range updates, etc.

Assortment formation is the activity of compiling a set of goods that allows you to meet real or projected needs, as well as achieve the goals determined by the management of the organization. The main goal of assortment formation is the fullest satisfaction of consumer demand. Formation based on planning a product range is a continuous process that continues throughout the entire life cycle of a product, from the moment the idea of creating it was conceived and ending with the withdrawal from the product program [2].

The main directions in the field of assortment formation are presented in table 1.

Assortment management involves the coordination of interrelated activities - scientific, technical, and design, comprehensive market research, sales organization, service, advertising, demand stimulation. The difficulty in solving this problem lies in the complexity of combining all these elements to achieve the ultimate goal of optimizing the assortment, taking into account the set strategic market goals of an enterprise. If this cannot be achieved, then it may turn out that the assortment will begin to include products designed more for the convenience of the production units of an enterprise, rather than for the consumer [5].

The main goal of the organization in the field of assortment management is to form a real or predicted assortment as close as possible to a rational one, to satisfy as many constantly growing diverse needs as possible, and to ensure a higher rate of development of an enterprise in comparison with competitors. Even though today theorists and practitioners of management and marketing have developed a considerable number of assortment management methods, product assortment management at enterprises is not based on the use of scientific methods. Specialists face certain difficulties in the process of choosing a specific assortment management tool that would best solve the problems of assortment formation. For the convenience of choosing the most effective method for analyzing the assortment in a particular situation, it is advisable to classify them.

**Table 1 Main directions in the field of assortment formation**

Directions in the field of assortment formation	Description
Reduction of assortment	Quantitative and qualitative changes in the state of a set of goods due to a decrease in its breadth and completeness. The reasons for the reduction in the assortment may be a drop in demand, insufficient supply, unprofitableness, or low profitability in the production or sale of certain goods. For example, in recent years, there has been a tendency to reduce the assortment due to cheap food and non-food products that are unprofitable for the manufacturer and seller, but necessary for the consumer.
Expansion of assortment	Quantitative and qualitative changes in the recruitment goods by increasing the indicators of breadth, completeness, depth, and novelty of the release of new goods. The reasons for the expansion of the assortment are the increase in demand and supply; high profitability of production and sale of goods; introduction of new products to the market. So, the current state of the Russian consumer market is characterized by an expansion of the assortment due to imported goods, as well as goods manufactured based on foreign technologies.
Deepening of assortment	Quantitative and qualitative changes in the assortment of goods due to the development and proposal of new brands or their modification. The reason for choosing this direction is the high saturation of the market, the desire to reduce the risk in the release of goods of minor novelty, the presence of well-known, popular brands, the lack of opportunity for the organization to release goods of new types. For example, foreign owners of confectionery factories prefer to have in the assortment of five or six trademarks - brands, and then release their new modifications due to changed product formulations or replacement of one type of auxiliary raw material for another.
Assortment stabilization	The state of a set of goods characterized by high stability and low renewal rate. This is a rather rare state of the assortment, inherent mainly in the assortment of everyday food products.
Renewal of assortment	Quantitative and qualitative changes in the state of a set of goods, characterized by an increase in the indicators of novelty. The reasons contributing to the renewal of the assortment are the emergence of new needs, the need to improve quality and competitiveness, stimulate demand.
Improvement of the assortment	Quantitative and qualitative changes in the state of a set of goods to increase its rationality.
Harmonization of assortment	Quantitative and qualitative changes in the state of a set of goods, reflecting the degree of proximity of the real assortment to the optimal or the best foreign and domestic counterparts, which are most fully consistent with the goals of the organization, for example, the desire of several "elite" stores to form an assortment based on the well-known foreign firms, if there are subsidiaries enterprises in different regions.

Source: [2; 7; 9].

The choice of assortment management methods, first of all, depends on the level at which the management process is carried out - strategic or tactical. At the strategic level, decisions are made related to the choice of an assortment management strategy following market conditions. At the tactical level, the choice of specific assortment positions is carried out based on the level of demand and economic indicators for each position. In accordance with this, it is necessary to select an assortment management method for each department. Thus, based on the proposed features of the classification of assortment management methods at an enterprise, a typology of assortment management methods is shown in Figure 1.

Let us analyze the strategic methods of assortment management, which are divided into three groups: methods for analyzing the market situation, methods for forming an assortment strategy, and methods for optimizing assortment management.

The methods used to analyze the market situation make it possible to identify factors related to market

conditions and determine the degree of their influence on the activities of an enterprise, as well as to give a general qualitative assessment of the current market situation and determine possible prospects. The most common tools used for these purposes are SWOT analysis, product life cycle concept [8], experience curve concept, Porter's five forces of competition model [4; 5].

Despite the advantages, there is a list of disadvantages of these methods: difficult to define the boundary of the market or industry in question; methods of predictive market assessment do not allow quantifying the influence of the identified factors on the market situation; to obtain a reliable forecast, it is necessary to apply these methods in combination, since the use of one method is not enough.

The next group of strategic methods includes methods that make it possible to formulate alternatives to the assortment strategy based on the target settings of an enterprise. These include the product-market matrix by I. Ansoff [7], its modifications proposed by D. Abel [8], and the matrix of generic strategies by M. Porter [5].

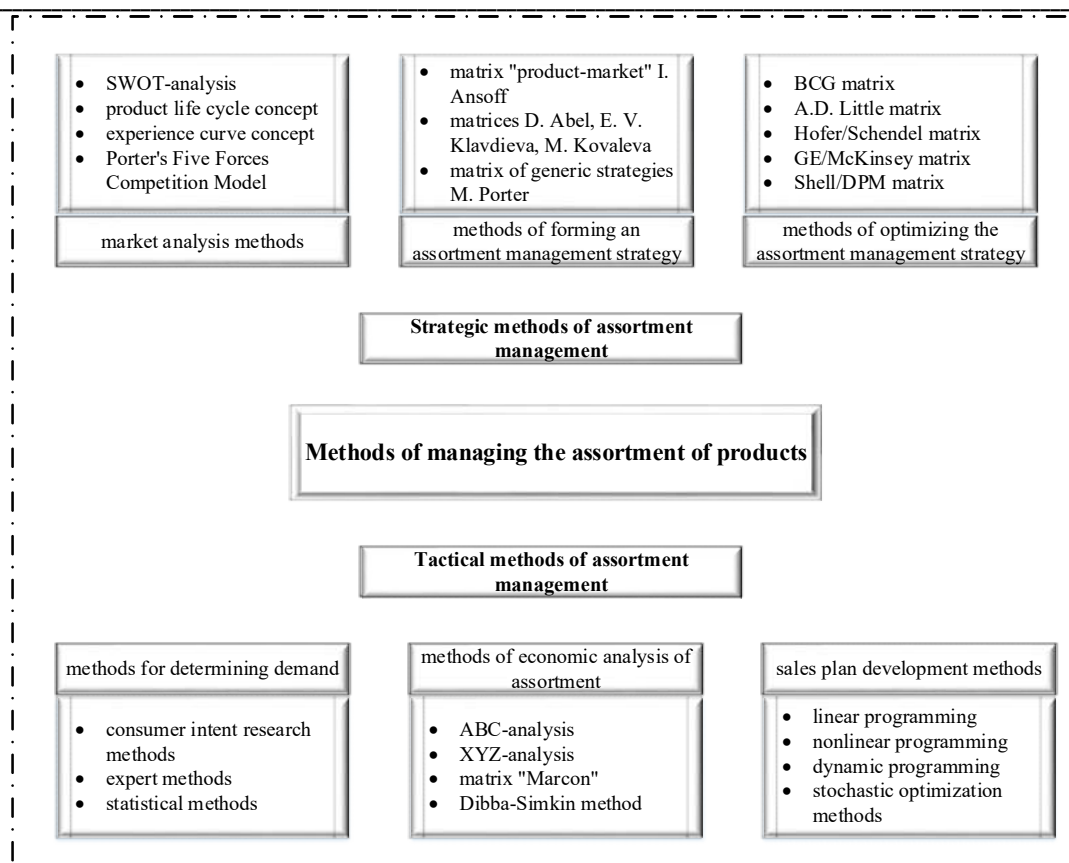


Figure 1. **Typology of assortment management methods in an enterprise**

Source: [4; 5; 8; 10-12]

The positive aspect of the matrices that set the direction of the assortment development is that they simplify the process of forming alternatives to the assortment strategy.

Consider a group of optimization methods for assortment management strategies. The function of this group of methods is to optimize the product range not only concerning the external environment and goals of an enterprise but also to its resources and capabilities. This group of methods includes the BCG matrices [9], A.D. Little [10], Hofer / Schendel [11], GE / McKinsey, Shell / DPM [12].

In these models, product portfolios are presented in the form of heterogeneous groups, among which some product groups can become sources of future growth of the company, but need additional investments, other groups ensure the stability of the company's development and are sources of investment, the third groups are not very promising for further development in the short-term and the long run. Nevertheless, despite several advantages, these models also have disadvantages. To remove the limitations of the BCG matrix and consider a larger number of criteria for market attractiveness and a company's competitive position, the models led in practice to subjectivity in the choice of factors, assigned weights and estimates, using not objective data, but intuitive, "political" assessments.

Speaking about the group of strategic assortment management methods, we can highlight the main problems associated with their application:

- it is necessary to accurately define the boundaries of the markets in which each product line of the company competes. An inaccurate definition of boundaries will lead to an inadequate forecast of market development, as well as to an unclear understanding of the competitive advantages of product lines and the prospects for their development.

- the key point is an accurate assessment of factors, which would be more consistent with the influence of this factor, and not the convenience of its measurement and use in the analysis.

- it is necessary to use the considered tools in aggregate following their field of application, taking into account the links between the methods.

Next, we will consider the tactical methods of managing the assortment of an enterprise. They can be divided into three groups: methods of determining demand, methods of economic analysis of the range, and methods of developing a sales plan.

To determine the demand for products, methods of researching consumers' intentions, expert and statistical methods are used [13].

Considering this group of methods, we can say that statistical forecasting methods are preferable if there is a large amount of data and, at the same time, large changes

are not expected. If the volume of sales has changed dramatically in recent years, it is better to use research methods of consumer intent and expert methods. Along with this, the choice of a method for determining demand depends on the stage of the life cycle in which the product is located and the ability to collect data. It is possible to increase the accuracy of the forecast through the combined use of various methods.

The group of methods of economic analysis of assortment includes such tools as ABC-analysis, XYZ-analysis, the "Marcon" matrix, the Dibb-Simkin method, etc. [1].

Based on the analysis of the methods of economic assessment of the assortment, it can be concluded that the complex methods of the economic analysis show the need to consider a whole group of indicators of the effectiveness of the assortment. The composition of these indicators and their impact on the final assessment differs depending on the characteristics of the assortment, an enterprise itself, and the prevailing market conditions. Therefore, the methods developed by scientists should not only be selected but also adapted based on the current situation at a particular enterprise.

Let us analyze the following group of tactical methods of assortment management at an enterprise, which is associated with the development of a sales plan. It includes various methods of mathematical modeling: linear programming, nonlinear programming, dynamic programming, etc.

The sales plan is one of the main documents that determine the order of an enterprise and therefore is an object of increased attention of all interested parties defending various interests. The use of this group of assortment management methods makes it possible to transfer all these interests from the political channel to

the area of economic decisions that are optimal concerning the current situation, resources, and goals of an enterprise.

However, having analyzed the methods used to develop a sales plan, we can conclude that linear models do not have a full set of possibilities for choosing options for the assortment structure, since they allow you to obtain an optimal solution for only one specific planning period and do not consider its relationship with the indicators of the previous and subsequent period [2]. These disadvantages can be partially eliminated using dynamic models, nonlinear programming methods, and stochastic optimization.

Speaking about the group of tactical methods, we can say about the need to use both statistical methods of analysis and expert ones, since statistical methods, based on a large amount of information for previous periods, make it possible to achieve high planning accuracy. However, the use of these tools is effectively provided the stability and availability of data. These disadvantages can be eliminated by the use of expert methods, which are quite effective in rapidly changing conditions and high uncertainty of the environment.

**Conclusions.** Thus, having analyzed the concept of a product range, considering the formation of an assortment as an activity to compiling a set of goods that allows satisfying real or projected needs, and also based on the proposed classification of assortment management methods at an enterprise, we can conclude that the process of effective assortment management in modern conditions is emerging beyond the scope of production and sales of products and determines the need for an integrated approach to the management of an enterprise as a whole.

#### References:

1. Orlov, O. O. (2002). *Planuvannya diialnosti promyslovoho pidpriemstva [Industrial enterprise activity planning]*. Kyiv: Skarby [in Ukrainian].
2. Chukhrai, N. I. & Patora, R. I. (2006). *Tovarna innovatsina polityka: upravlinnia innovatsiiamy na pidpriemstvi [Commodity innovation policy: innovation management in the enterprise]*. Kyiv: Kondor [in Ukrainian].
3. Kotler, P., Armstrong, G. & Saunders, J. (2004). *Principles of Marketing*. London: Prentice Hall Europe. [in English].
4. Mintzberg, H. & Ahlstrand, B. J. (1998). *Lampel. Strategy Safari A Guided Tour Through the Wilds of Strategic Management*. New York: The Free Press Simon & Schuster Inc. [in English].
5. Porter, M. E. (1998). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: Free Press. [in English].
6. Doyle, P. & Stern, P. (2006). *Marketing Management and Strategy*. 4th ed. Pearson Education Limited. [in English].
7. Ansoff, Y. (1989). *Stratehicheskoe upravlenye [Strategic management]*. Moscow: Ekonomika [in Russian].
8. Abell, D. F. (1980). *Defining the Business: The Starting Point of Strategic Planning*. London: Prentice-Hall. [in English].
9. Dihtl', E. & Hershgen, H. (1996). *Prakticheskij marketing [Practical marketing]*. Moscow: Vyssh. shk.: INFRA-M [in Russian].
10. Osel, R. & Wright, R. (1980). *Allocating resources: How to Do It in Multi-Industry Corporations. Handbook of Business Problem Solving*. New York: McGraw-Hill [in English].
11. Hofer, C. W. (1977). *Conceptual Constructs for Formulating Corporate and Business Strategy*. Boston: Boston University [in English].
12. Hichens, R. E., Robinson, S. J.Q. & Wade, D. P. (1978) The Directional Policy Matrix: Tool for strategic Planning. *Long Range Planning*, 11, 8-15 [in English].
13. Armstrong, J. S. (1999) *The IEBM Encyclopedia of Marketing*. London: Sales Forecasting [in English].
14. Starostina, A. O. & Zhurylo, V. V. (2014) Osoblyvosti motyvatsii ta rynkovoї povedinky ukraïnskykh spozhyvachiv vysokotekhnolo-hichnykh tovariv [Features of motivation and market behavior of Ukrainian consumers of high-tech goods] *Marketynh v Ukraini*, 10, 18-23 [in Ukrainian].

