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# Modeling the behavior of an industrial enterprise as a factor of sustainable development

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**Abstract.** This article reveals the main factors affecting sustainability of organization's development, considers the basic concepts of the subject's behavior model in modern conditions of production organization, shows the basic components of modeling the enterprise's behavior in the enterprise system. The theoretical features of the enterprise's activity in modern conditions are considered, elements of the enterprise's development plan are listed and their brief description is given, conclusions are drawn. Also considered is the "4P" complex, which includes the "four policies": commodity, pricing, marketing and communication. Particular attention is paid to aspects of the practical application of this complex, which are manifested in the services sector, and the main means of influencing customers are considered. The main tasks and principles of the industrial enterprise. The concept of "8P" is also presented for consideration, its industrial orientation is justified. The use of this concept creates conditions for quick adaptation of production, assortment and quality of products, the entire system of managing the production and marketing activities of enterprises, determining the structure and dynamics of demand needs, performing individual tasks, which in turn ensure the achievement of the goal.

## 1. Introduction

The aim of the work is to establish the nature and role of marketing activity in enterprises, engaged in entrepreneurial activity in modern market conditions. Improving marketing activity is necessary to achieve the goals of the organization and to increase the efficiency of using the resources at its disposal. Marketing activity provides a flexible adaptation of the production, financial, trading, sales and personnel activities of the enterprise to a changing market situation, reducing the level of uncertainty for making effective management decisions [1, 2].

This is achieved by studying the external and internal environment of the organization, assessing the level of competitiveness of the organization and finding ways to increase it. The development of market processes in the Russian economy aroused great interest from domestic entrepreneurs and economists in the marketing concept of management at the firm level and the methods of marketing influence on the formation of market demand and the competitive position of the company [3-5].

Marketing is one of the most important activities of the enterprise. Marketing is understood as a complex system of organization of production and sales of products, focused on meeting the needs of specific consumers and making a profit, based on market research and forecasting. Marketing objectives



- the formation and stimulation of demand, ensuring the soundness of management decisions and work plans of the organization, as well as expanding sales, market share and profits. To produce what is selling, and not to sell what is produced, is the main slogan of the marketing approach in the management of scientific and technical activities, production and marketing for any company [6].

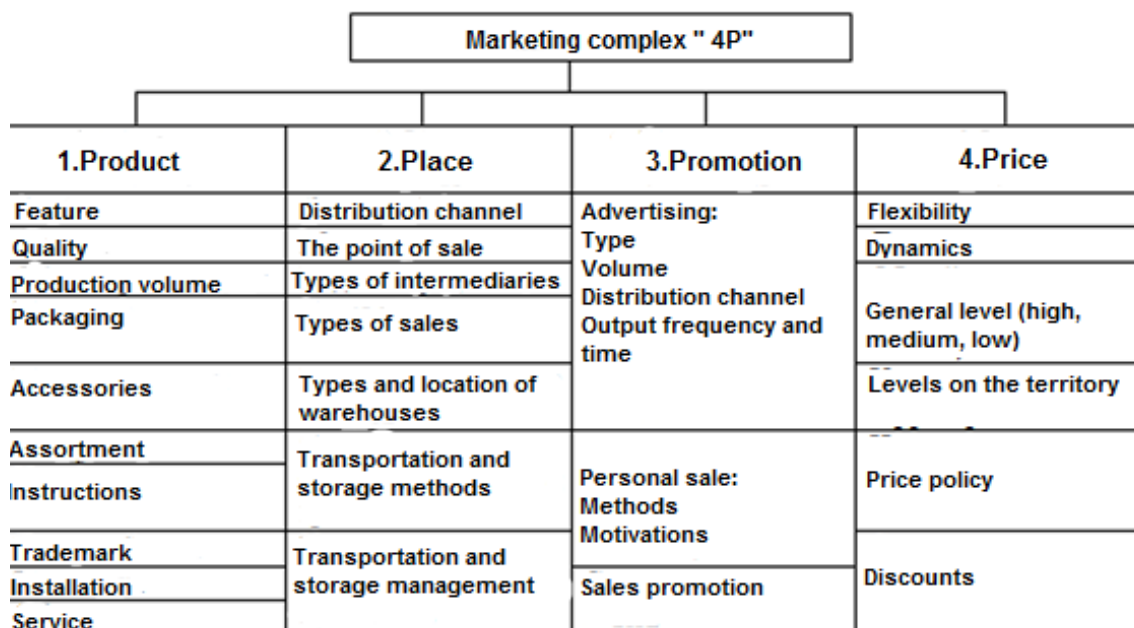
**2. 4P concept**

This concept is based on the determination of needs, real customer assessments of the assortment, quality of goods and recognition of the need to adapt production and marketing to these needs and assessments. The marketing concept assumes that the achievement of the enterprise’s goals depends on determining the needs and demands of the target markets, as well as on more effective customer satisfaction than competitors [2, 5, 7].

The study of consumers by marketing begins with the identification of their motives and needs, and ends with the sale of products and the satisfaction of identified needs. The core of any marketing activity on the market is the concept of marketing mix, often referred to as the "4P" or marketing complex- this is a set of tools used in marketing to influence consumer demand.

These tools were selected from many others, primarily because their use had a direct impact on demand and could stimulate consumers to make purchases. Conducting market research, analysis of the strengths and weaknesses of the company, segmentation and other marketing tools, of course, also help the marketer in his pursuit to increase the demand for goods and services of the company, but have only an indirect effect. The results of successful marketing research can be used to change one or more elements of the marketing mix and only in this way affect consumer demand [8, 9].

Another useful property of the elements included in the marketing mix is their manageability - a marketer can manage each element with the goal of influencing demand, select the most promising combinations of elements [4]. In addition, the sequence of elements of the marketing mix clearly shows the sequence of implementation of the main marketing functions. The marketing mix includes all the tools that an enterprise can operate to manage the demand for its product. There are four main groups of such tools: product, price, communication, and sales policies. Another commonly used name for the marketing mix is the 4P model (Product, Price, Place, Promotion) figure 1.



**Figure 1.** Marketing mix scheme.

Product policy. The main objectives of the product policy - ensuring the competitiveness of the product, analysis of its life cycle and the formation of the product range. The product is everything that

can satisfy any need and is offered to the market for the purpose of selling. The development of product policy involves determining the specific set of products that the company will offer for sale.

Each product is considered at four levels. The first level is the core of the product, the product by design. The second level is the product in real execution. It represents the core of the product, implemented in the basic physical characteristics of the product, and has five characteristics: level of quality, a set of properties, unique design, brand name and specific packaging. The third level - the product with reinforcement - means that additional characteristics are added to the main characteristics of the goods, with the advent of which the consumer receives additional conveniences when purchasing or using the goods. The fourth level - the product in the full sense - includes how the consumer perceives the product as a whole, that is, the image of the product in the consumer's mind.

The life cycle of a product is a model of the change in consumer attitudes to goods. In order to correctly formulate the production program of the enterprise, it is necessary to determine at what stage of the product life cycle the product is. The product life cycle has several stages: product development and market launch, growth, maturity and decline. Each of these stages has its own characteristics and requires the adoption of individual decisions in the framework of product policy.

Price policy implies the establishment of optimal prices for enterprise goods and their change depending on the market situation with the aim of gaining a certain market share, ensuring the intended profit volume and solving other strategic and operational tasks. When pricing, one should take into account many constantly changing factors affecting the level of the established price: production costs, prices and pricing strategies of competitors, the size and nature of demand, distribution channels and product characteristics. The pricing policy should be based on the general objectives of the enterprise.

Sales policy implies the choice of the best option for the distribution of goods and the strategy of coverage of outlets. Distribution is the process of moving goods in space and time from producer to consumer. When developing a sales policy, an enterprise must choose the type of distribution channel (this is a set of intermediaries that facilitate the process of moving goods from producer to consumer). Direct channels are forms of goods movement without the participation of intermediary organizations. Indirect channels are forms of moving goods through an independent or coordinated distribution network. Mixed channels combine the features of direct and indirect distribution channels.

The length of the channel is determined by the number of levels of which it consists. An additional level of the distribution channel is formed any intermediary who performs this or that work to bring the product and ownership of it to the end customer.

Choosing the option of market coverage: exclusive sales (distribution on exclusive rights), when only one reseller gets the right to sell goods, selective distribution (selective sales system), when the company selects a small number of resellers, intensive distribution - maximum market coverage and an increase in the number of sales points.

Communication policy consists of five main means of influence: advertising, sales promotion, public relations, personal selling and direct marketing (table 1). Advertising is any paid form of non-personal presentation and promotion of ideas, goods and services. Sales promotion - a variety of short-term promotional campaigns aimed at stimulating the purchase or testing of a product or service. Public relations - various programs created to promote and (or) protect the image of the company and its products. Personal sale - direct interaction with one or more potential buyers in order to organize presentations, answer questions and receive orders. Direct marketing - the use of mail, telephone, fax, e-mail and other non-personal means of communication for direct impact on current or potential customers.

The components of the promotion differ from each other in the sense of the effect pursued by them, types of contacts with consumers, moment of time and duration of the response to the impact (table 2).

Toolkit objectives. The goals and results of applying the submix of marketing tools vary depending on the type of marketing policy. For example, the goal of a commodity and contract policy is to create an offer for the market. The task of distribution policy is to present, ensure the readiness of the implementation of this proposal in the market, and the task of communication policy is to create

publicity for the proposal in the market and to create a positive image of the product and enterprise (figure 2).

**Table 1.** Main means of influence.

Advertising	Sales promotion	Public relations	Personal selling	Direct marketing
- Media Ads	- Contests, games,	- Preparation of	- Trading	- Catalogs
- On the package	sweepstakes,	information	presentations	- Mailing
- Inserts	lotteries	packages for the	- Trading	advertising
- Commercials	- Prizes and gifts	press	meetings	- Telemarketing
- Brochures and	- Distribution of	- Speeches	- Incentive	- Shopping via
booklets	samples of goods	- Workshops	programs	computer
- Posters and	- Industrial	- Annual reports	- Distribution of	- Shopping via
flyers	exhibitions and	- Donations	samples	TV
- In directories	fairs	- Sponsorship	- Industrial	- Fax
- Reprints of	- Exhibitions	- Publications	exhibitions and	Communication
advertisements	- Demonstrations	- Maintaining	fairs	- Email
- On ad stands	- Coupons for	relationships with		- Telephone
- At exhibitions	goods	your contact		communication
- Demonstration	- Discounts	audience		
of new products	- Low interest on	- Lobbying		
- Audio-visual	the loan	- Identification of		
materials	- Entertainment	communications		
- Symbols and	- Acceptance of	- Company		
logos	goods as payment	directory		
- Onvideotapes	for the purchase	- Activities		
	of a new			
	- Long-term			
	programs			
	- Selling to the			
	load			

**Table 2.** Promotion difference.

Promotion type	Expected effect	Customer contact	Duration
Advertising	Change of approaches Change of behavior	Indirect	Average
Sales promotion	Sales	Semidirect	Short
Public relations	Change of approaches	Semidirect	Long
Personal selling	Sales	Direct	Short
Direct marketing	Change of approaches	Semidirect	Short

The marketing mix, being a comprehensive program of measures to promote goods and services from the seller to the final consumer, acts as a tool for optimal allocation of resources in the marketing and management planning system (figure 3). At the same time, a constant coordination of supply and demand of goods on the market is carried out with the help of marketing research and monitoring the compliance of actual indicators of entrepreneurial activity with planned installations.

We must clearly understand that marketing has its own role at each enterprise and its own set of functions in communication, product, distribution policy, pricing, etc. And there is nowhere to go from the classic 4P - they are present at each of the enterprises, but are often scattered across different divisions. There is a basic set of theories, knowledge and practical results that permeates all marketing - industrial and consumer products and services, commercial and non-profit organizations, etc. But in order to understand and reasonably solve problems in the field of industrial marketing, it should be

recognized that between industrial and consumer marketing there are a number of differences. And this is important, although often these differences can be quantitative rather than qualitative.

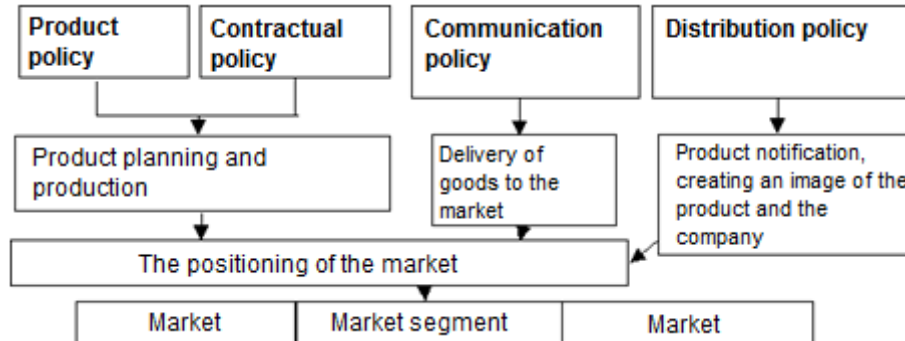


Figure 2. Integration of marketing toolkit goals.

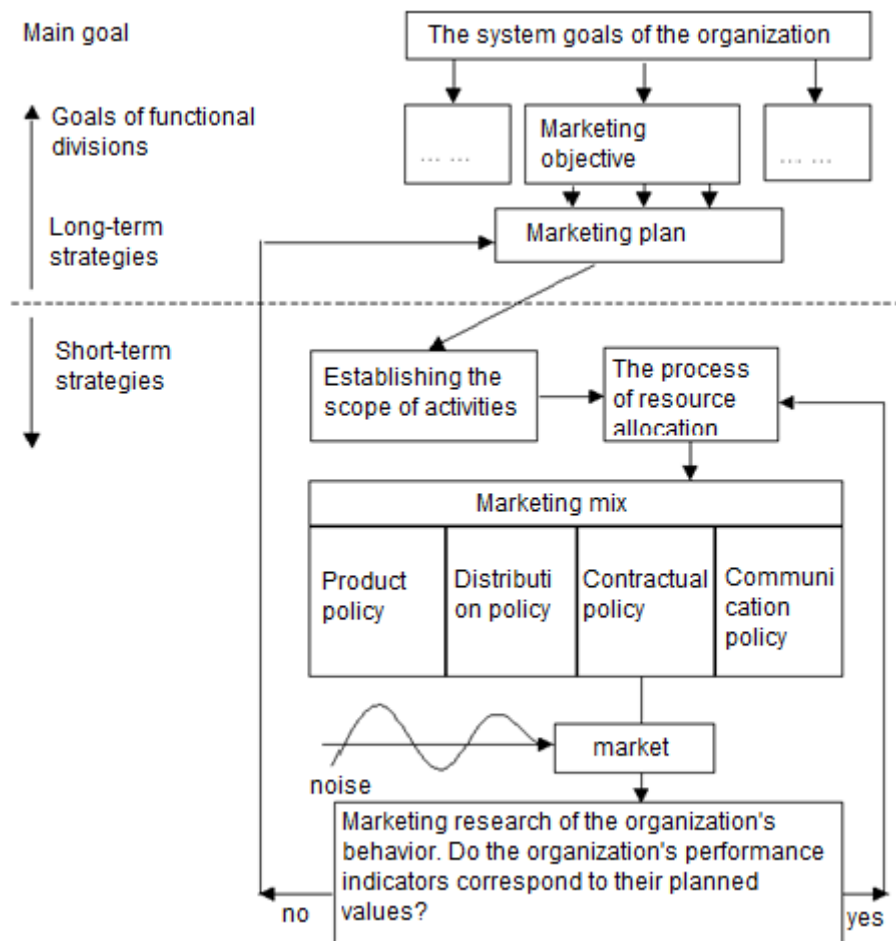


Figure 3. Elements of a marketing mix in the enterprise system.

### 3. Industrial marketing

It is a system for the development and implementation of industrial and commercial policies at an industrial enterprise, aimed at maximizing profit on the basis of market research and the creation of competitive products subject to their full implementation [10-12].

The concept of industrial marketing is to set a goal that is achieved through the development of a program that defines the production and commercial policies of the enterprise [6, 13].

The goals of industrial marketing are:

- Receiving a profit.
- Ensuring sustainable development of the enterprise.
- Achieving the efficiency of production and marketing of industrial products.
- Maintaining the proper authority of the enterprise among the economy and government agencies.
- Effective socio-economic policy at the enterprise and achievement of stability of its personnel.

The main goal is to obtain the planned rate of return by creating competitive products using commercial programs to ensure optimal speed of product promotion on the market and effective and full sales of manufactured products.

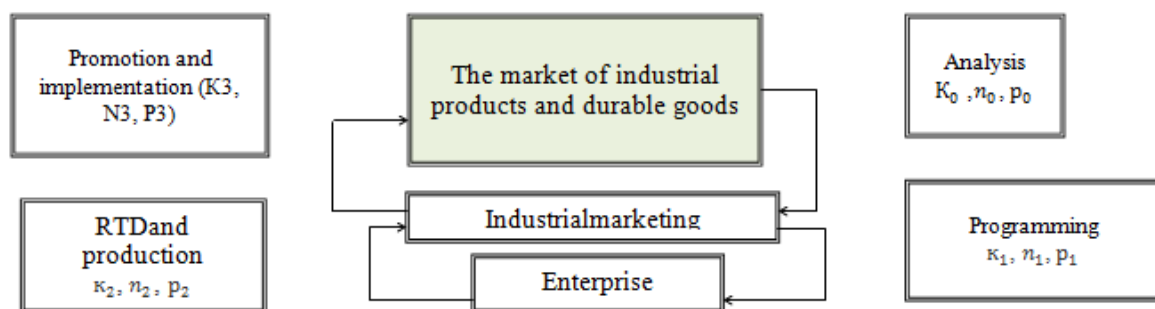
To achieve these goals, marketing must ensure the implementation of the following tasks:

- Obtaining the maximum possible profit for the enterprise.
- Ensuring maximum satisfaction of personal and social needs.
- Providing a wide selection of related products services.
- Ensuring high quality products, achieving its competitive level, including the establishment of affordable prices for products and its after-sales services for consumers.
- Maximizing the quality of life and achieving the well-being of society.

The fulfillment of these tasks is ensured by continuous study of market conditions and the dynamics of demand for products, constant analysis of price changes, the study and forecasting of the purchasing power of consumers, the widespread use of effective ways and methods of attracting consumers, including special advertising campaigns and working with the public, creating special structures at the enterprise and effective HR management in the marketing system.

The functions of industrial marketing are specific areas and the specific content of marketing activities at the enterprise, allowing to achieve the achievement of immediate goals and objectives.

It has been established that at present the marketing functions at industrial enterprises are combined into the so-called “8p” system, each element of which is implemented as a result of marketing activity, determining and ensuring the fulfillment of individual tasks, which in turn ensure the achievement of the goal. In the general case:  $P = 8p$ , where  $P$  is the effectiveness of the marketing system,  $p$  is the functions of the marketing system.



**Figure 4.** The impact of industrial marketing on the enterprise:  $k$  – product quality,  $n$  – output volume,  $p$  – price (for  $n_3 > n_0$ ,  $k_3 > k_0$ ,  $p_3 > p_0$  – the enterprise is most efficient).

#### 4. 8P concept

This article considers industrial marketing and therefore it is necessary to consider the 8p system. Marketing mix was considered earlier, so you need to pay attention to the remaining components of the 8p system. Consider the definitions of industrial marketing functions.

5p – people, population, consumers of all categories, including organizations. The 5p function performs assessment of needs, demand of products by consumers, their behavior, demographic, social, intellectual isolation, their well-being and solvency, if this applies to legal entities.

6p – personnel. The function that determines the personnel policy in the marketing service system, in the system of production and sales of goods. Registration of applications, training in the rules of work with the customer, consumers, suppliers, partners, competitors. The selection of personnel, their subsequent training in order to improve professionalism and qualifications. Teaching ethics of conduct, foreign languages, the desire to be a worthy representative of a particular enterprise.

7p – production. This is a function of industrial marketing that analyzes the state and capabilities of an enterprise, its production equipment and production personnel, implemented technologies that provide the necessary efficiency and productivity, as well as production costs. In addition, the production reserves and its abundance are recorded, which allows to quickly vary production volumes and quality of products.

8p – plan. Planning of marketing activity, regulation and preparation of short-term, medium-term (2.5-5 years) and long-term (5-15 years) plans, including strategic plans. The establishment and presentation of plans for specific goals and objectives and their quantitative estimates for the planning period. Development of specific activities for personnel, material and financial support of marketing activity.

Development of marketing activities is inextricably linked with the development of enterprise management as a whole, including the introduction of strategic management and the expansion of the planning horizon of the production and sales activities of the enterprise. It should always be remembered that the marketing concept can be developed only after determining the strategy of the enterprise's behavior in the market. At the same time, the goals and strategy of the enterprise cannot be developed without appropriate marketing research. Marketing research determines how to take a position in the market, in what ways and methods you can achieve and maintain the competitive advantages of the enterprise, ensuring the achievement of its goals.

Marketing, as a system, has its own goals, its own structure (elements and their interconnections), implementation methods and tasks. The system of marketing activities should be considered as a subsystem of effective enterprise management in a market economy. The main directions of marketing activities of the enterprise within the framework of this system include the implementation of policies in the field of quality and assortment of products, pricing, sales and communications. The content of the marketing activities of the enterprise involves the following tasks:

- Comprehensive market research.
- Identification of potential demand and unmet needs.
- Product range and price planning.
- Development of measures to best meet existing demand.
- Sales planning and organization.

The solution to these problems is based on the use of analysis methods and specific strategies for the enterprise to enter the market. This should be achieved by organizing systematic marketing research, supplemented, if necessary, by special research on specific issues (problems). As a result of these studies, an information base is created for making forecasts, which are the basis for the development of marketing programs and strategies.

Usually for the near future a detailed short-term forecast is made, and for more distant and less defined periods of the future, the forecast is outlined in general terms. To be effective, marketing analysis must be comprehensive, objective and critical in the sense that existing practices should be compared with accepted standards and principles.

The main principle of marketing is the orientation of production to the real requirements and wishes of consumers. It is based on other principles that determine the content of marketing activities in the enterprise:



- Continuous, systematic, comprehensive and thorough accounting of the state and dynamics of needs, demand and consumption, as well as market characteristics, conditions of production and sales activities in order to make appropriate specific business decisions.
- Creation of conditions for the quick adaptation of production, the range and quality of products, the entire management system of production and marketing activities of enterprises to market requirements, the structure and dynamics of needs and demand.
- An active impact on demand, the market and the consumer through advertising, trade and pricing policies, an effective system of control over the distribution of goods.

Marketing is considered effective if its activities mobilize, cooperate and coordinate the efforts of all services of the enterprise in order to meet the needs of the consumer and ensure sustainable profit of the enterprise.

The company and its competitors provide their products directly to the end consumer or through a marketing intermediary. The influence of the external environment on all participants in the system under consideration is determined by the same factors. Each of the above elements of the modern marketing system contributes to the creation of consumer value. Therefore, the success of the enterprise depends not only on its own marketing activities, but also on how fully and adequately the needs of the end consumer are met by all elements of the system

## 5. Conclusion

Based on this, it can be concluded that in conditions of fierce competition and rising costs, the ability of any organization to use the basic tools of behavior becomes an indispensable condition for the survival of an economic entity, a sales policy that is directly related to the distribution of products plays an important role. Interest in this activity is growing as more and more organizations in the field of entrepreneurship, in the international sphere and in the non-profit sphere realize how exactly the effective application of the 8P concept by organizations contributes to their survival and prosperity.

Modeling the enterprise's behavior on the basis of this concept in market conditions allows you to find "your" customer, hold him, satisfying his needs to a greater extent than competitors, which increases consumer loyalty to the company.

Manufacturers and exporters consider this concept as a means to achieve the goals fixed for a given period for each specific market and its segments with the highest economic efficiency. However, this becomes real when the manufacturer has the opportunity to systematically adjust his scientific, technical, production and marketing plans in accordance with changes in market conditions, maneuver his own material and intellectual resources to provide the necessary flexibility in solving strategic and tactical tasks, which together on the sustainable development of the organization.

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