

CONCEPTUAL APPROACHES TO MARKETING INFORMATION SYSTEMS DEVELOPING FOR INDUSTRIAL ENTERPRISES

Problem statement. Increased competition between economic actors at the Ukrainian market has raised the interest of national scientific researchers and practitioners searching for approaches that ensure the effective functioning of business organizations in the new economic conditions. The dominance of the marketing concept as the basis of modern enterprise management is due to several factors.

First, it is worth noting the fact that in the early twenty-first century, most commodity markets in Ukraine gradually drew near to the high level of saturation and are characterized by intense competition. Accompanied with the reduction in effective demand for goods and services during the economic crisis, demands on the quality of marketing management are increasing, the enterprises increasingly acute question clearly to define their target segments of the specific needs, which is only possible with the use of marketing tools.

In terms of effective demand reduction in Ukraine due to the crisis a change of the volume and structure of consumption is happening, the purchasing behavior of consumers is changing; their choice becomes increasingly rational and carefully balanced. This requires from manufacturers more increasingly focus on the tools of marketing management both at the strategic and tactical level, because manufacturers in order to ensure sustainable market position requires a prudent price policy, the optimal assortment policy with changes in consumption patterns, more thoughtful and purposeful marketing measures to promote products, etc. Therefore, at this point it is clear that the basis for successful market activities that performs modern enterprise is marketing and strategic marketing management system covering all functional areas of its operations. At the other hand, it should be noted that the knowledge base of effective marketing is the information marketing system of enterprise, which is currently emerging as an important foundation in making strategic and tactical decisions. All said before has identified the relevance of the study.

Analysis of recent research and publications. The use of marketing in the enterprise covered in research of S. Garkavenko [1], A. Voychak [2], A. Oksanich [3], V. Petrenko [3], O. Kostenko [3], H. Churchill [4], E. Golubkov [5], L. Balabanova [6], A. Starostina [7], P. Kotler [8], V. Praude [9], O. Biluy [9], L. Yezhova [10], V. Poltorak [11], M. Belyavtseva [12], S. Mkhitarian [14] I. Buchatska [15], V. Markova [16]. However, not enough attention is paid to the problem of building marketing information systems industry in terms of increased competition.

Objective statement. The aim of the paper is to study the concept of marketing information system building for industrial enterprises.

The main material of research. The study of theoretical and methodological foundations of strategic marketing management clearly shows that correct and consistent use of complete, accurate and high-quality marketing information provides an effective decision-making and leads to an improvement of the company, which, in its turn, becomes the foundation for creating competitive advantage in the long-term strategy. However, a prerequisite for the effective use of marketing information in decision-making is developing a marketing information system that provides reliable processing of information flows in order to find ways to improve the enterprise activity.

Studies show that the transfer of information between the management levels of the enterprise, which is needed for the successful conduct marketing activities and making effective management decisions making, is possible through modern information technology and communications. For the present conditions a high-performance information system application in the enterprise based on the use of the latest technical tools and automated processing of digital textual information, a unified information system is typical [1, p. 31].

Obviously, in the current context of dynamic environments in enterprises demands for completeness, quality and timeliness of the receipt and processing of marketing information are significantly increasing. Under the influence of these requirements there is a total shift to the marketing activities of enterprises in effective information and means of processing, which currently is a necessary (but not sufficient) condition for the effectiveness of marketing management. Therefore, it is considered the most effective option information support of business, in accordance with a systematic approach, an organization of information systems in marketing.

To date, an important area of marketing information system is to reduce the level of problem solving various tasks and ensuring effective implementation of the strategic marketing of manufacturing control based on continuous processing of the data streams.

Currently to ensure the development, implementation and operation of information systems in marketing enormous material, time and labor resources are spending, moreover they will continue only to

grow. It is clear that the effectiveness of these costs depends largely on the comprehensiveness and completeness of the research study of the theoretical and methodological bases of the market information systems (MIS) development, which form the basis for their practical implementation in the marketing activities of domestic manufacturing enterprises.

The main purpose of implementing the company marketing information system is a constant providing managers with information to streamline and make optimal management decisions.

The scientific literature defined MIC as a set of techniques, methods and organizational measures and technical means for collecting, processing and accumulation of data necessary to carry out marketing activities of the company.

A. Voychak believes that «Marketing Information System is a set of planned and systematic methods and processes for collecting, processing and analyzing marketing information they need to make marketing decisions» [2, p. 49].

The rational determination of MIC is considered by A. Okhanych, V. Petrenko, O. Kostenko, who view it as «a set of measures and instruments aimed at problem solving on the coordination of marketing strategy for enterprise management» [3, p. 301]. G. Churchill understood MIS as set of procedures and techniques designed to regulate the systematic collection, analysis and distribution of information for the preparation and adoption of the marketing decisions [4, p. 42].

Scientist E. Golubkov believes that «MIC is a totality (single set) of personnel, equipment, procedures and methods designed for the collection, processing, analysis and distribution within the prescribed time accurate information necessary for the preparation and adoption of marketing decisions» [5].

According to L. Balabanova, MIS or marketing information system is a set of information processes to meet the information needs of different levels of decision-making in marketing [6]. It should be noted that in this approach and interpretation of the term «marketing information system» is identified with «system of marketing information» what is quite often in scientific literature. Therefore, A. Starostina and V. Kravchenko believe that marketing information system is a permanent system of interaction between people, equipment and teaching methods for planning, obtaining and processing, designed to achieve the desired results [7, p. 31]. P. Kotler believes that «Marketing Information System - permanent system of interconnection of people, equipment, and instructional techniques designed for the collection, classification, analysis, evaluation and distribution of relevant, timely and accurate information for use by marketing managers for the purpose of improvement planning, transformation in life and control over the implementation of marketing activities» [8, p. 76].

Scientists V. Praude, A. White call continuous operating interconnected system of people, equipment and procedures for the collection, processing, analysis, evaluation and distribution of information on the location, time and accuracy for decisions on marketing planning, its instruments and control - information system of marketing (ISM) [9, p. 45]. Under this definition, they refer to MIS.

Other scholars argue that the similarity of concepts MIC and ICM does not make them identical because «marketing information system is a system of personnel, equipment, methods and data intended for the collection, processing, storage and transmission of marketing information. A system of marketing information is a set of organizational marketing information. «Depending on the type of information system of marketing information distinguish between the external environment and internal marketing information system environment. We agree with the opinion of L. Yezhova, who believes that marketing information systems are tailored to the specific needs of enterprises and therefore every company has its own system [10, p. 37]. We share the opinion of V. Poltorak, who states that: «The marketing information system in the first place, is part of the enterprise information management system; secondly, it uses external and internal sources of information, the development provides connections with the market; thirdly, for each enterprise MIS may be at different stages of development: a simple system of records; system of marketing reports; system focused on the use of various types of computational models» [11, p. 35]. A. Starostina and other scientists believe that the MIS is needed only for implementation of marketing activities and all other activities (manufacturing, innovation, and investments) are not based on it. These statements can be argued as marketing information affect other activities of the company. Thus, based on marketing information strategic decisions about the production of a certain type of product are made. Moreover, using it strategic plans of production, depending on each individual product life cycle are accepted. Innovative activity is also accompanied by marketing information, because without it it is impractical to analyze the design and manufacture of innovative product or service. In other turn, the risk of investment is also reduced if the decision of an investment project is grounded on marketing research data. Thus, we can say that at the heart of most policy-making decisions lays marketing information.

In science, MIS are generally considered as systems that perform similar functions, despite the fact that their names may be different (for example, subsystem of internal marketing information can be interpreted as a system of internal accounting).

Given the above views on the nature of MIS, we can shape our interpretation of this concept, according to which as a marketing information system we understand the complex organizational and management structure that includes: personnel, equipment, methods and techniques for collecting, analyzing and forecasting market data optimized for decision-making. Various interrelated processes: research; information gathering, processing, storage and transmission of information; indicators, methods

and models of observation, forecasting and analysis, MIS creates a solid basis for making management decisions.

MIC at the enterprise should be based on certain principles. The main one, as M. Belyavtseva underlines, includes [12, p.58]: the definition of the basic requirements of the data according to its nature and focus; development of storage, use and delivery of information in both centralized and decentralized in administration; determine the need for technical equipment (including computer equipment) company as a whole and in each unit; software development, creation and last one - use of data banks; provide copying facilities, Telex, all means of connection and communication within the company as a whole.

Effective development and inclusion in MIS management activities of the company will ensure effective adaptation to changes in the enterprise environment, allow by constructing a system of surveillance and research as a marketing medium to assess the extent, nature and direction of its effect on the position of the company in a strategic perspective. Ultimately operation of the marketing information system should direct the company to choose the most optimal marketing strategies (from the list of strategic alternatives), and provide an opportunity to systematically monitor market positions and to take necessary corrective measures in case of changes (Fig. 1). With this information, subsystem observations allow to accumulate insufficient amount of information and data to provide continuous monitoring of changes in key environmental factors in the dynamics.

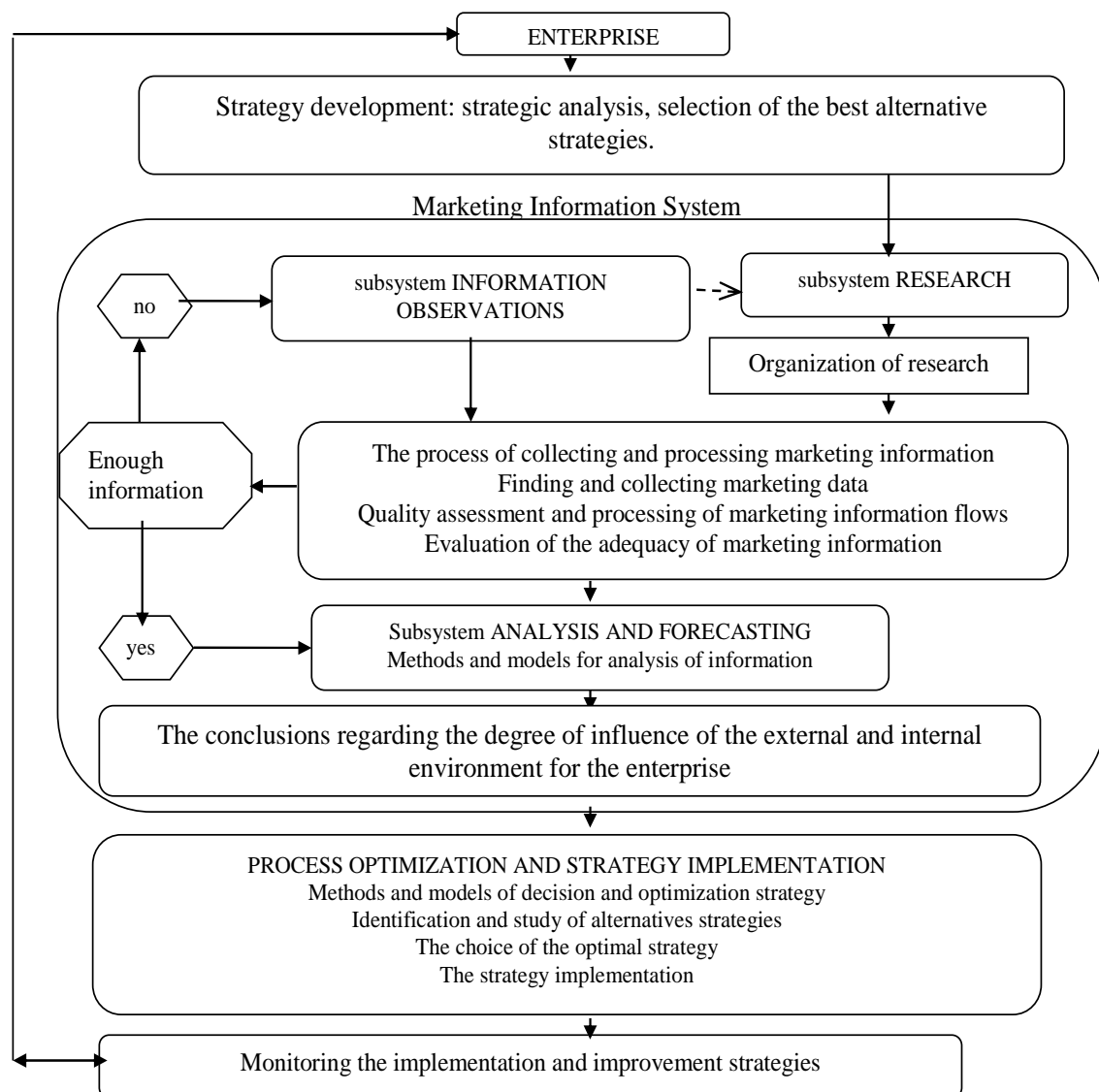


Fig. 1. Improving adaptability of enterprises in the strategic plan based on marketing and information supplies¹

¹Source: developed by author

In addition to surveillance information system, an important place in the MIC for the implementation of high-quality strategic management decisions takes subsystem of marketing research because it provides marketing information search, defines the criteria, constraints, options, opportunities and priorities, and then chose the necessary and most effective ways of gathering information data.

In science, the term “marketing research» refers to the process of collecting, processing and analyzing data on the marketing aspects of the company, within which to use of certain decisions, and analysis components of the environment that affect marketing activities of the firm [13 , p. 249].

Therefore, the study of factors of marketing environment by collecting and processing marketing information will optimize the collection, processing, storage and transmission of information data to identify important trends and making effective strategic management decisions (Figure 2).

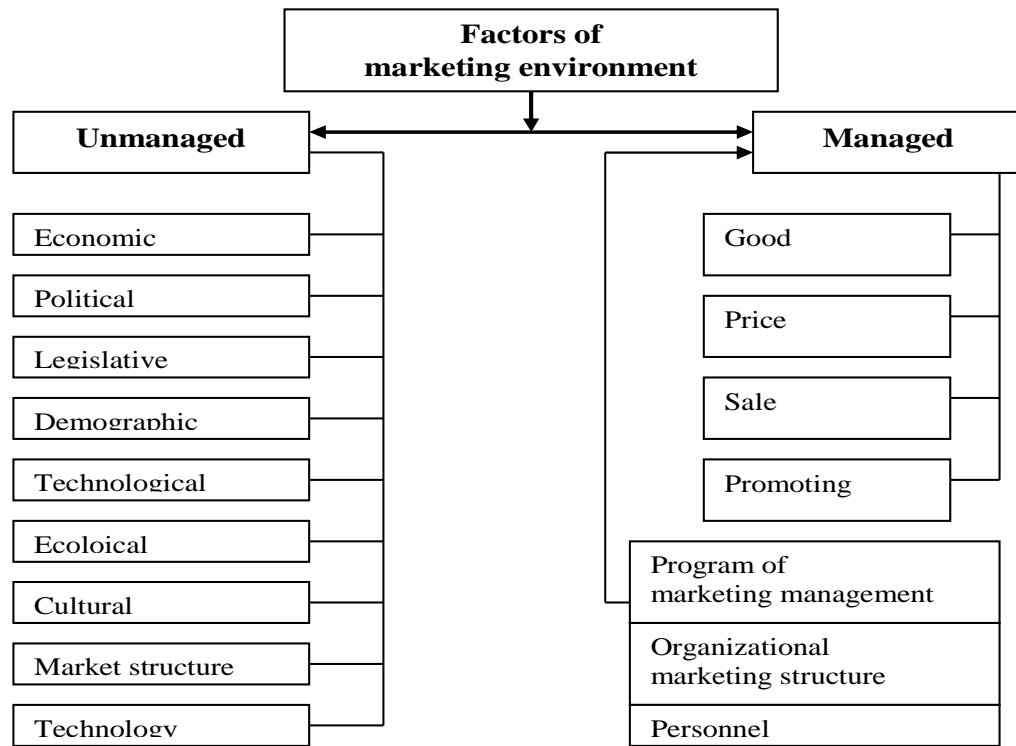


Fig 2. The main factors of the marketing environment ²

²Source: developed by author

In addition to the information subsystem observation, the effective functioning MIS is also provided by qualitative process analysis and forecasting researched information available. This process is designed to perform subsystem "Analysis and Forecasting" in the framework of MIS. It should provide an effective analysis of received marketing information data. An important consideration during the analysis and forecasting of marketing information should be given to methods and models, based on which processing of qualitative data collected should be carried out.

Process of analysis and forecasting of marketing information in MIS enables to justify the most optimal parameters to specify alternative ways of management decisions. Prediction accuracy depends on the quality of performance of previous stages and methods through which the analysis is made. Thus, the complex process of analyzing and forecasting data information will form several alternatives of management decisions. Then, through the process of selecting and implementing management decisions the best choice for the company is made.

We agree with the assertions of leading researcher S. Mkhitarian, who claims, «marketing information system is involved in all phases of marketing management. At the analysis stage MIC helps to collect, organize and process information. At the planning stage helps to develop plans for different levels of specification. Some components of MIS, such as workstations (WS), can efficiently execute marketing plans. In stage of control MIS evaluates the difference between planned and actual performance, thereby affects the adjustment plans and marketing management» [14, p. 24].

Talking about the organizational component of MIS, its subsystems and considering it as an organizational management structure is worth noting that it may have different life stages (cycles) of functioning. Yes, we can partially agree with I.Buchatska, who states that “for every enterprise MIS is characterized by its different type of life cycle: development of a marketing information system (preliminary analysis, planning, development and operation of a marketing information system); implementation (detailed operation plan a marketing information system); development (compliance performance efficiency of the marketing information system planning figures); decline (to comply with performance efficiency of marketing information system planning figures)” [15].

Going through life cycles of operation, MIS is being necessarily modified for each of them. That is why at the decline stage of MIS we need to reorganize and adapt its activities to the new conditions due to changes in the external environment and the different dynamics of growth.

We agree with the researcher V. Markova, who to ensure the effective functioning of the MIS in the company has formed a number of issues that need to be addressed to managers of the enterprise [16, p.31]: organizational: who should be responsible for the successful operation of this system in the company; how to ensure the regularity of completing the necessary forms and other information transfer from the staff of the company, etc.; procedural: how to deal with quality information, without which it is impossible to explain the root causes that determine the dynamics of the market; how to assess the reliability of information; communicational: how to ensure the participation of managers in creating MI, and use of information in decision-making process.

Shaping the enterprise's MIS, it is necessary to optimize its work, focusing on its mobility and efficiency. For efficient processing of marketing data is important to use software that will allow more quickly analyze information and information- analytical department, experts will manage information and analytical support for marketing activities of the company. To date, many enterprises already have information-analytical department, which has its information database. We should note that for MIC formation important role plays information of marketing department. Thus, based on existing information as from marketing and information-analytical department via specialists can create a database of months.

Talking about the organizational structure of MIS, it is advisable to offer the minimum level employees who are able to carry out its work effectively based on computer and software resources: market researcher - for collecting information resources and their structures for effective analysis and rapid decision-making, as it relies on task of tracking both internal and the external environment; marketing analyst works in tandem with searcher and forms the main criteria for selection and evaluation of information data; determine the methods of collection, research, analysis and forecasting; marketing manager of MIS heads and coordinates the work of the marketing department, his/her main task is making effective strategic management decisions.

Conclusions and further research. Therefore, today is quite important task for Ukrainian companies is to ensure the effectiveness of strategic management through the introduction of comprehensive information and analytical marketing system. We can note that the current conditions of functioning local businesses is very important application of high-performance marketing information system based on the use of the latest technical tools and automated processing of digital textual information, a unified network with a communication system.

The role of marketing information system in marketing management system is to determine the information needs for marketing management, and timely receipt of it by decision-making managers. Clearly, the development and introduction of elements of marketing information systems in the practice of any company provide it with quick access to information about the market situation and qualitative edge over the competitors.

Experience shows that marketing information systems in enterprises may be at different stages of development, including simple system of records; system of marketing reports; system, focused on the use of various kinds of computer models and marketing forecasting and so on. In the other turn, developed marketing information system includes the following elements: information about the internal capabilities of the enterprise to effectively use them in making the marketing efforts; information about the development of the external environment for the development of strategic and operational decisions of marketing activities on the market; information on the results of specific market research undertaken now in order to obtain additional data of the original character; marketing information processing system (using modern information technology to collect and analyze marketing data).

Arguably, the rapid entry of domestic enterprises in market conditions require them mobility and speed in making marketing decisions. In these conditions, marketing information systems are beginning to play a major role in the company and make a significant contribution to the process of making marketing decisions, and thus can rightly noted that the issue of putting into practice the marketing of specialized information and analytical systems are very important for Ukrainian companies. The choice of a software is driven by the scale of the company, the number and complexity of the marketing tasks facing marketing services companies, the level of computerization and skill level of staff and budget spending on marketing. The solution of the objectives will be problematic field of scientific research in this sphere.

References

1. Harkavenko, S.S. (2004), *Marketyng* [Marketing], textbook, Libra, Kiev, Ukraine, 712 p.
2. Voichak, A.V. (1998), *Marketynhovui menedzhment* [Marketing management], textbook, KNEU, Kiev, Ukraine, 268 p.
3. Oksanych, A.I., Petrenko, V.R. and Kostenko, O.P. (2008), *Informatsiini systemy i tekhnolohii marketynhu* [Marketing informational systems and technologies], tutorial, «Vydavnychiy dim «Profesional», Kiev, Ukraine, 320 p.
4. Cherchyl, G.A. (2000), *Marketingovue issledovaniya* [Marketing reserch], textbook, St. Petersburg, Russia, 752 p.

5. Holubkov, E.P. (1999), *Osnovy marketynhu* [Marketing Principles], textbook, Eksmo, Moscow, Russia, 103 p.
6. Balabanova, L.V. (2004), *Marketingovuy menedzhment* [Marketing management], tutorial, Znannia, Kiev, Ukraine, 354 p.
7. Starostina, A.O., Chervanov, D.M., Zozulok, O.V. (2002), *Marketynh* [Marketing], tutorial, Znannia-press, Kiev, Ukraine, 191 p.
8. Kotler, F. (2003), *Marketing ot A do Ya. 80 koncepciy, kotorue dolzhen znat kazhduy menedzher* [Marketing from A to Z], Neva, St. Petersburg, Russia, 224 p.
9. Praude, V.R. and Bilyi, O.B. (1994), *Marketing* [Marketing], Vyscha shkola, Kiev, Ukraine, 256 p.
10. Ezhova, L.F. (2002), *Informatsiinui marketyng* [Informational marketing], tutorial, KNEU, Kiev, Ukraine, 360 p.
11. Poltorak, V.A. (2003), *Marketynhovi doslidzhennia* [Marketing research], tutorial, Tsentr navchalnoi literatury, Kiev, Ukraine, 387 p.
12. Beliaitsev, M.I. and Vorobiova, V.N. (2006), *Marketynhovui menedzhment* [Marketing management], manual, Tsentr navchalnoi literatury, Kiev, Ukraine, 407p.
13. Mochernyi, S.V. etc. (2001), *Ekonomichna entsyklopediia*, Tom 2, [Economic encyclopedia, Part 2], Vydavnychiy tsentr "Akademiia", Kiev, Ukraine, 848 p.
14. Mkhitarian, S.V. (2006), *Marketingova informatsionnaya sistema* [Marketing informational system], Eksmo, Moscow, Russia, 336 p.
15. Bytchatska, I.O. (2000), *Rozvytok informatsijnogo zabezpechennya marketingovoi diyalnosti torgovelnug pidpruemstv* [Marketing informational support development of trading companies activities], thesis abstract for Cand. Sc. (Econ.), Kiev, Ukraine, 20 p.
16. Markova, V.D. (2005), *Marketing menedzhment* [Marketing management], Zkor-shtaga, Novosibirsk, Russia, 248 p.

Panukhnyk Ya.H. CONCEPTUAL APPROACHES TO MARKETING INFORMATION SYSTEMS DEVELOPING FOR INDUSTRIAL ENTERPRISES

Purpose is justification of a marketing information system conception for industrial enterprises.

Methodology of research. The study used: monographic, abstract and logical approach to the study of theoretical and practical problems of building a marketing information system for industrial enterprise; methods of comparison, analysis and synthesis - the study of the views of scientists and researchers regarding the definition of the essence of the concept of "marketing information system".

Findings. The essence of marketing information system for industrial enterprises is defined. Principles of building a marketing information system for industrial enterprises are grounded. The necessity of a systematic approach to building a marketing information system for industrial enterprises is determined. Directions for adaptability increase of enterprises in the strategic plan based on marketing information system are underlined. Stages of marketing information system for industrial enterprises are identified.

Originality consists in applying an integrated approach to building a marketing information system for industrial enterprises.

Practical value. The obtained results of the study will ensure the effectiveness of the development, implementation and operation of the marketing information system in the industrial enterprises. They can be used in the practice of enterprises of different ownership forms and functional orientation.

Key words: marketing, industrial plant technology business management, marketing information system, marketing research.