

УДК 658.589(477)

JEL I21, M31, O33, O34, D80

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MARKETING OF SCIENTIFIC AND EDUCATIONAL KNOWLEDGE OF THE MODERN UNIVERSITY¹

The purpose of the article is to develop theoretical and methodological bases for forming the marketing system of scientific and educational knowledge of modern university. The basic tasks of marketing of scientific and educational knowledge of the modern university are specified and systematized. The tasks concerning orientation of the knowledge production system on the most perspective types of knowledge, as well as formation and stimulation of demand, promotion and application (commercialization) of modern knowledge are detailed: separately in sections of scientific and educational knowledge. On the basis of the existing practice, it is proposed to apply the concept of 8P marketing of scientific and educational knowledge of universities. An integrated scheme of the marketing system of scientific and educational knowledge of the modern university has been formed uniting types of marketing; main tasks; tools for solving these problems into a single complex. The distribution of functions and management decisions of separate units and senior management of the university is performed.

Key words: marketing of scientific and educational knowledge, tasks of marketing of knowledge of university, concept of 8P complex of marketing of knowledge, management of marketing of scientific and educational knowledge, oriented on knowledge of university management.

DOI: 10.15276/mdt.3.4.2019.1

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¹ The work contains the results of scientific research on topics: «The mechanism of knowledge management in the system of innovative development of business entities» (№ ДП 0117U002255); «Development of a mechanism for the commercialization of innovative products» (№ ДП 0118U003572).

Statement of the problem in general form and its connection with important scientific or practical tasks. An analysis of the economic growth processes of developed countries indicates that their success is based primarily on technological innovations in which new relevant knowledge is embodied. Management of the processes of development (acquisition) and use (commercialization) of knowledge is one of the main factors of competitiveness of national economies and their individual elements - enterprises and institutions. Practice shows that among the many types of knowledge, the leading role is played by scientific and educational knowledge, which is the basis of professional and technical knowledge. The development, systematization and dissemination of relevant scientific and educational knowledge is traditionally concentrated in universities, which are important elements of the knowledge market infrastructure. From these positions, one of the main priorities of the management system of modern universities is to focus their activities on the most promising areas of scientific research (in accordance with their profile), as well as the formation of appropriate educational programs aimed at training specialists who are able to translate new relevant knowledge into innovative products, technologies for their creation and use, management methods and the like. In these conditions, the problem of searching for effective tools for selecting relevant areas of development (acquisition) and dissemination of scientific knowledge, as well as the dissemination of educational knowledge created on their basis, is actualized.

Analysis of the latest research and publications, which initiated the solution of this problem and on which the author relies. The issues of managing the scientific and educational knowledge of universities in recent years have been studied in numerous works of domestic and foreign scientists. In particular, the general approaches to knowledge management (knowledge marketing) at universities, improving their activities in the market of scientific and educational services were studied by such scientists as Goldobin N.D. [1], Matveev M.Ya. [9], Pilipchuk V.P. [10], Serbinovsky B.Y. [11], Yakshin A.S. [15], Scarborough E. [17], Thomas M. [18].

Teletov A., Teletov S. [12, 13] consider the current state of the application of marketing methods and tools in science and education in Ukraine.

Karpyuk A. [7] has been formed a marketing mix for the education sector, both from the perspective of a seller and a consumer.

Dereń A.M., Skonieczny J. [16] represent the original concept of the complex of marketing of intellectual property products, and these are the majority of scientific and educational developments of universities.

Nikolaevskaya V. [8] considers marketing approaches to the formation of a positive image of a military air defense.

Khaminich S., Suima I. [14] explore the features of marketing educational services in the context of globalization, compare the conditions for its use in Ukraine and other countries.

Highlighting the previously unresolved parts of the general problem to which the article is devoted. As follows from the analysis of literary sources, almost all scientists, as the most effective approaches to market-oriented knowledge management of higher education institutions, embodied in their scientific and educational services, consider marketing methods and tools. However, the existing developments are fragmentary, they consider certain aspects of the marketing of scientific and educational services and do not allow the formation of an integrated management mechanism on the principles of marketing the processes of development and dissemination (realization) of scientific and educational knowledge of a modern university.

Formulation of the purpose of the article (statement of the problem). The aim of the article is to develop the theoretical and methodological foundations of the formation of a marketing system of scientific and educational knowledge of a modern university.

Statement of the main material of the research with full justification of the scientific results obtained. A systematic analysis and generalization of literary sources and practice of marketing activity of higher education institutions allowed to highlight the main tasks of marketing the scientific and educational knowledge of a modern university, which operates in unstable conditions of the modern economy, caused by changes in technological patterns (completion of the fifth and the beginning of the sixth) and the next (fourth) industrial revolution. These tasks are systematized: separately for scientific and separately for educational knowledge. Although in many cases they should be considered in a single aggregate, since they are mutually complementary [3].

The main objectives of the marketing of scientific and educational knowledge of the university are:

1. Orientation of the system of generation (receipt) of scientific (applied) knowledge to the most promising types of knowledge, based on the profile of the university and its existing potential, as well as the current trends in the development of world and domestic science, technology and technology.

1.1. Identification of promising areas of fundamental scientific research: analysis of trends in the development of scientific and technological progress; analysis of the areas of scientific activity of similar Higher Education Institutions (HEI), both domestic and foreign; analysis of foreign grants for HEI; analysis of the topics of scientific projects of domestic HEI, which won the competitions of the Grant of the President of Ukraine, The MES, State Foundation for Basic Research, etc. analysis of the subject of business contracts of domestic ZVO; analysis of topics of state awards in the field of science; analysis of topics of scientific publications (monographs, articles in journals, conference proceedings, etc.). The analysis should cover the last 5-7 years.

1.2. Identification of promising areas of applied research: analysis of problems in the field of economics (human activity in general), to which the university's tangent scientific activity; analysis of the problems of consumers of products in industries in which the university is involved in scientific activities; analysis of the problems of specific enterprises and institutions that can be solved by university scientists; analysis of the topics of publications in industry, professional journals, materials of practical (scientific and practical) conferences and the like.

2. Promotion, formation and stimulation of demand for scientific knowledge in order to disseminate, use, commercialize it.

2.1. Publication of the results of scientific (applied) research in monographs, magazines, conference materials and the like.

2.2. Patenting of new technical and technological solutions.

2.3. Publication of articles(see Clause 2.1), research reports, reports on scientific and applied scientific conferences, information letters and messages on electronic media: in repositories, on thematic sites, on sites of centers of scientific and technical information, in abstracting databases and indexing, on the websites of universities and their divisions, on social networks (in the form of links to electronic sources), in electronic libraries, etc.

2.4. Participation in thematic events (holding them) [2]: scientific and applied scientific conferences, exhibitions, conferences for the exchange of experience and the like.

2.5. Correction of existing and development of new courses of educational disciplines of existing curricula, or the development of new curricula for the training (retraining) of specialists.

2.6. Placing knowledge embodied in intellectual property objects on the websites of Internet exchanges of industrial property objects [4], as well as through organizations promoting technology transfer, for example, Aventures (Ukrainian), Philburg Technologies (USA).

2.7. The use of standard tools and technologies of Internet marketing [6] to promote knowledge, as well as their carriers in the market of scientific and educational services.

3. Prediction of promising areas, specialties, training programs (retraining) of specialists based on the profile of the university and its existing potential.

3.1. Analysis of trends in the development of scientific and technological progress and the transformations and liquidations that he initiated that exist, as well as the emergence of new sectors of the economy (branches of human activity in general).

3.2. Analysis of trends in the development of engineering and technology, management methods in the field to which the university's tangent activities (related industries).

3.3. Analysis of the activities of domestic and foreign universities of a similar profile.

4. Analysis of labor markets: the volume and trends of changes in the needs of specialists in certain areas, specialties and training programs (retraining) of trends in the form and content of training (retraining) of specialists; market positions of own university and other similar HEI in the context of the markets (regional, national, international), directions, specialties and specializations of training.

5. The formation and stimulation of demand for educational services, the provision and maintenance of communications with consumers of educational services, as well as organizations and individuals that influence consumer choice.

5.1. Formation of a promotion complex for the university, its departments, training specialties and educational programs: advertising; PR price and non-price sales promotion; personal sale and the like.

5.2. The formation and strengthening of the image of the university and its departments, training specialties and educational programs.

5.3. The positioning of the university, in particular in international (Shanghai, QS, Webometrics, etc.) and national rankings.

It should be noted that the task of paragraphs. 1, 3, 4, 5.2, 5.3 relate to strategic marketing. Others - to the tasks of operational marketing, their implementation occurs through measures of the marketing mix. Practice shows that the marketing mix of scientific and educational knowledge of a modern university should be formed in accordance with the concept of 8P:

- Product (scientific, educational, scientific and educational)
- Price;
- Promotion;
- Sales;
- HEI staff;
- Process: staff work technique; system for the provision of scientific, educational, informational, consulting services; infrastructure provision of services; service culture; compliance with sanitary standards, comprehensive services, etc.;
- The physical environment in which the process of providing scientific and educational knowledge takes place: the premises and its interior; office and other equipment; clothes and type of service personnel; design of the site, pages of HEI in social networks, etc.
- The psychological perception of the service (the provision of scientific and educational knowledge) by consumers (applicants, students, colleagues from other HEI representatives of employers and business, etc.), as well as representatives of other economic

contractors and contact audiences. In the general case, it reflects the subjective factors of service perception by the indicated persons, as well as their associations regarding the name of the famous product and the university, its symbolism, corporate identity, brand, image, psychological comfort in the process of providing scientific and educational knowledge.

A generalization of the foregoing allowed the formation of a marketing scheme for the scientific and educational knowledge of a modern university, which integrates into a single system: types of marketing; A task; tools for solving problems (Fig. 1).

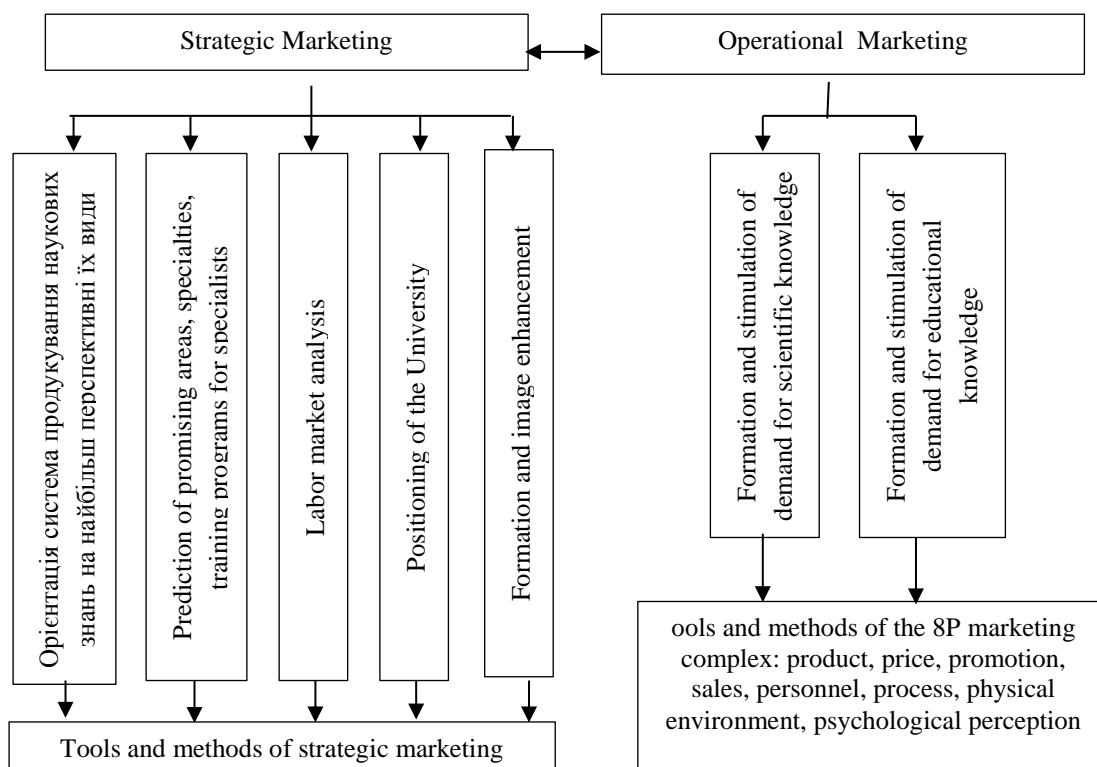


Fig. 1. The scheme of the marketing system of scientific and educational knowledge of the university (authoring)

The effective functioning of the marketing system of scientific and educational knowledge of the university provides for a rational distribution of functions between its departments that implement the above tasks.

In the table. 1, systematic management decisions of university departments that fulfill the tasks of marketing scientific and educational knowledge. It should be noted that in table. Figure 1 presents one of the typical options for the distribution of functions for managing scientific and educational knowledge between the departments of a typical university. In a particular case, other distribution options are possible.

In the table. 1 introduced the following conventions of management decisions

D – management decisions;

I – information support for management decisions;

C – coordination of management decisions;

R – realization of decisions;

CD – control of decisions.

As follows from the analysis of the table. 1, the main burden of fulfilling the tasks of marketing the university's scientific and educational knowledge lies with the department, mainly with the basic one – graduation.

Table 1. Distribution of functions for the management of scientific and educational knowledge between departments of the university (authoring)

A task	Divisions and individuals							
	Rector	Academic Council	Vice-rector for scientific work и	Vice-rector for initial work	Marketing Service	Computer Services	Institutes (faculties)	Departments
Orientation of the system for developing scientific knowledge to their most promising types	C	C	D,CD		R	I	C	R
Prediction of promising areas, specialties, training programs	C	C		D,CD	R	I	C	R
Labor market analysis	C			D,CD	R	I	C	R
University positioning	D,CD	C	C	C	R	I		
University department positioning	D,CD	C			R	I	B	R
Positioning specialties, training programs	C	C		D,CD	R	I	C	R
The formation and strengthening of the image of the university	D,CD	C	C	C	R	I		
Formation and stimulation of demand for scientific knowledge	C		D,CD		R	I	C	R
Formation and stimulation of demand for educational knowledge	C			D,CD	R	I	C	R

It is on them that not only the main scientific and educational activities are concentrated, but also the activities for the implementation of knowledge marketing activities. The leadership of faculties (institutes) mainly plays the role of an arbiter in coordinating the scientific and educational interests of their departments. Vice-rectors for scientific and educational work coordinate the interests of individual institutes (faculties) and carry out general management within their competencies. University management (rector, academic council, etc.) are responsible for strategic decisions regarding the university as a whole: positioning on the market of scientific and educational institutions after, building and strengthening the image of the university as a scientific and educational institution, specializes in certain areas of scientific and educational activity generally.

The marketing service and the computer support service contribute, respectively: to the implementation of strategic and operational marketing activities (their concretization is carried out at the graduating departments) to the information support of management decisions on conducting marketing research on the Internet, as well as on the implementation of communication and marketing policies on the Internet.

As follows from the above, it is proposed to build a marketing system of scientific and educational knowledge of a modern university from the bottom up. In this case, the interests of the institute (faculty) are considered as the resultant of the interests of their departments (mainly

graduating), the interests of the university as the resultant of the interests of its institutes (faculties).

Given the growing role of Internet technologies in the production of marketing activities by domestic and foreign ZVOs (including in the implementation of the marketing tasks of scientific and educational knowledge), the university's basic units (graduating departments) should have a sufficient level of web culture, which is an integral part of its corporate culture that provides a consistent and effective interaction of personnel in a virtual environment [5]. In this context, it is necessary to control the level of web-culture of the basic units of the university and the production of measures to maintain it at the proper level.

Note that knowledge is an integral part of all three subsystems of the university's intellectual capital: human - personnel knowledge; organizational (structural) - knowledge embodied in intellectual property products (patents, copyright certificates, know-how, etc.); Consumer (interface) - knowledge about the features of activities and cooperation with economic contractors and contact audiences. Accordingly, the marketing of scientific and educational knowledge is one of the tools to ensure a high level of intellectual capital in HEI.

The place of marketing of scientific and educational knowledge in the knowledge-oriented control system of the HEI is shown in Fig. 2 (see Designations in italics).

According to the scheme in fig. 2, the university produces new scientific and educational knowledge based on existing knowledge that comes from the external environment, as well as those generated by its internal units. The knowledge gained is distributed (commercialized) in the external environment, and also used inside the university. At the same time, new scientific knowledge allows introducing corrections into educational knowledge by improving courses of disciplines, training programs, as well as adjusting the direction of scientific research. This process is cyclical.

Conclusions from this research and prospects for further developments in this area. A generalization of the above allowed us to formulate the following conclusions.

1. Clarification and systematization of the main tasks of marketing the scientific and educational knowledge of a modern university. Tasks related to orienting the system of generating (receiving) knowledge to the most promising types of it, as well as the formation and stimulation of demand, promotion and use (commercialization) of relevant knowledge: separately in the context of scientific knowledge, separately - educational, are highlighted and detailed.

2. Based on the analysis of existing practice, it is proposed to apply the concept of 8P marketing of scientific and educational knowledge of universities. The essence and content of the individual components of the 8P complex are detailed.

3. An integrated scheme of the marketing system of scientific and educational knowledge of a modern university has been formed, which integrates into a single complex: types of marketing; main goals; tools for solving these problems.

4. A scheme for organizing the activities of units of a typical university for the implementation of its main tasks is proposed. The distribution of functions and solutions, which are assigned to individual departments and senior management of the university.

5. The developed block diagram of the knowledge-oriented university management system, it says the role and place of marketing of scientific and educational knowledge.

The results obtained significantly deepen the theoretical and methodological foundations of a market-oriented management of a modern university in terms of the formation of a marketing system for scientific and educational knowledge. Practical implementation of the research results will form the foundations of the organizational and economic mechanism for managing the processes of generation and use of scientific and educational knowledge of a modern university, as the basis for its sustainable innovative growth in the knowledge economy.

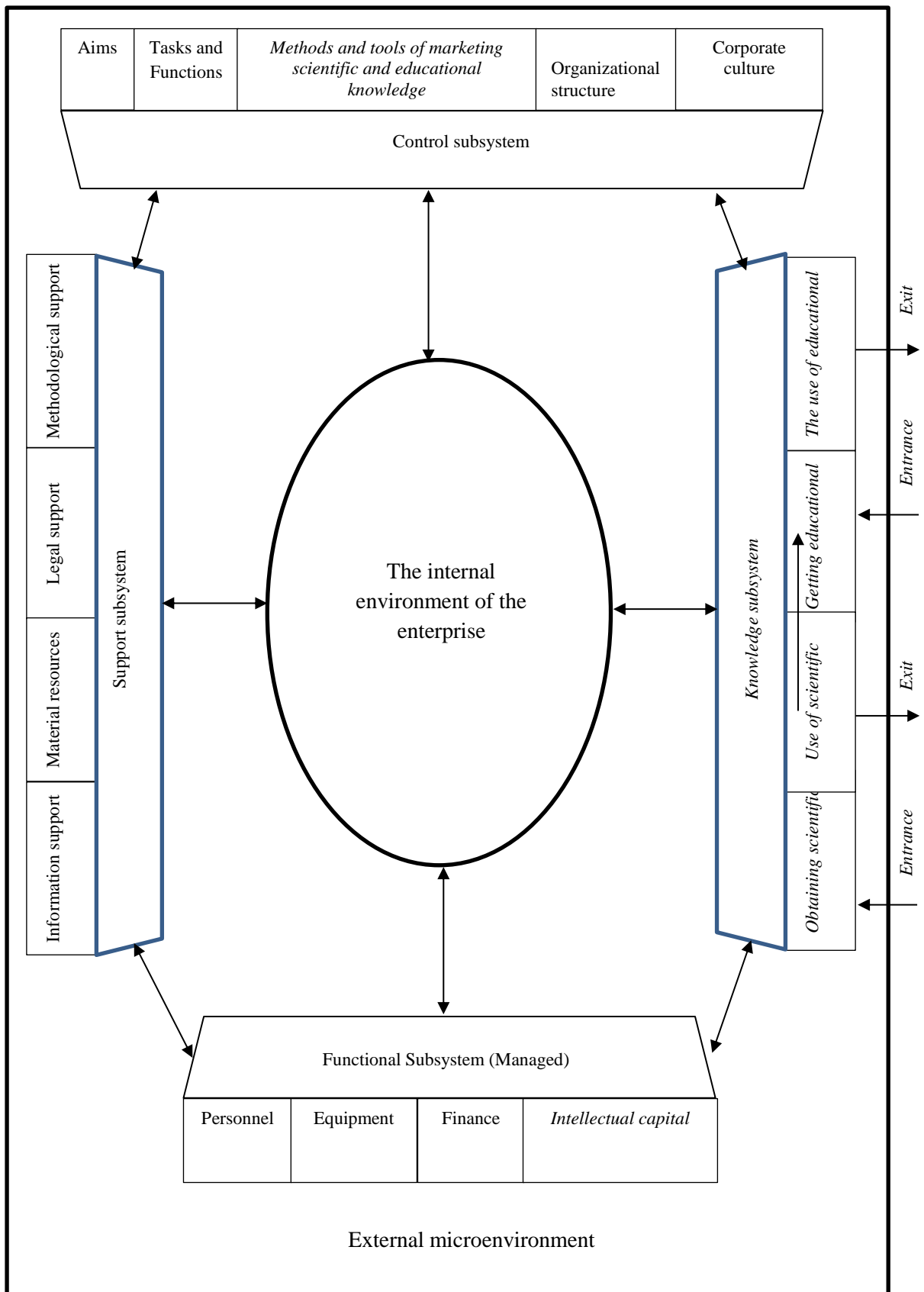


Fig. 2. The structure of the knowledge-oriented university management system (authoring)

It is on them that not only the main scientific and educational activities are concentrated, but also the activities for the implementation of knowledge marketing activities. Further research should be aimed at developing the methodological foundations of the marketing management system of the scientific and educational knowledge of the university.

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Маркетинг науково-освітніх знань сучасного університету.

Стаття присвячена розробленню теоретико-методологічних засад системи маркетингу науково-освітніх знань сучасного університету. З цих позицій систематизовано основні завдання маркетингу науково-освітніх знань, виокремлено і деталізовано завдання, що стосуються орієнтування системи продукування (отримання) знань на найбільш перспективні їх види, а також формування і стимулювання попиту, просування і використання (комерціалізації) актуальних релевантних знань: окремо у розрізі наукових знань, окремо – освітніх. Обґрунтовано доцільність застосування концепції 8P в системі оперативних заходів комплексу маркетингу науково-освітніх знань університетів. Сформовано укрупнену схему маркетингу науково-освітніх знань сучасного університету, яка об'єднує в єдину систему: види маркетингу; основні завдання; інструменти вирішення зазначених завдань. Розроблено організаційні аспекти функціонування маркетингу науково-освітніх знань університету. Розроблена схема орієнтованої на знання системи управління університетом, визначено роль і місце в ній системи маркетингу науково-освітніх знань. Отримані результати істотно поглиблюють теоретико-методологічні засади ринково-орієнтованого управління сучасним університетом в частині формування системи маркетингу науково-освітніх знань.

Ключові слова: маркетинг науково-освітніх знань, завдання маркетингу знань університету, концепція 8P комплексу маркетингу знань, організація маркетингу науково-освітніх знань, орієнтоване на знання управління університетом.

Received to the editor October 17, 2019.